

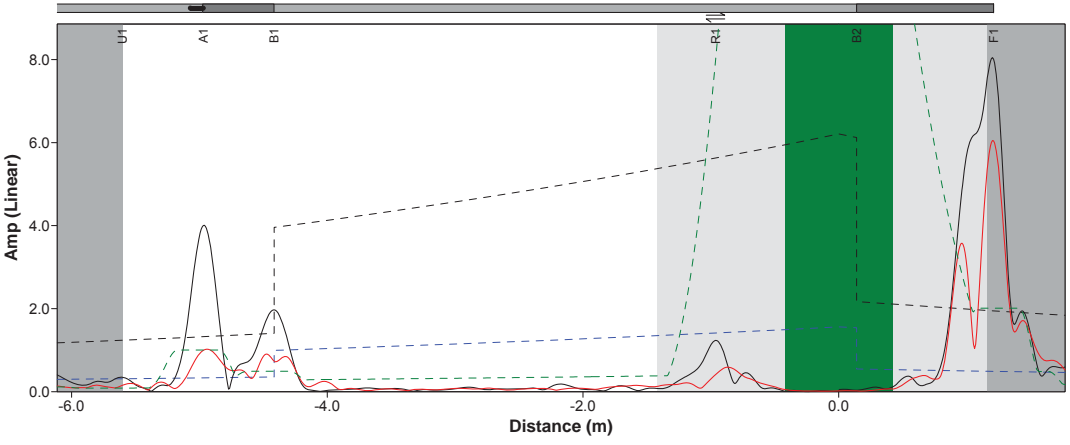
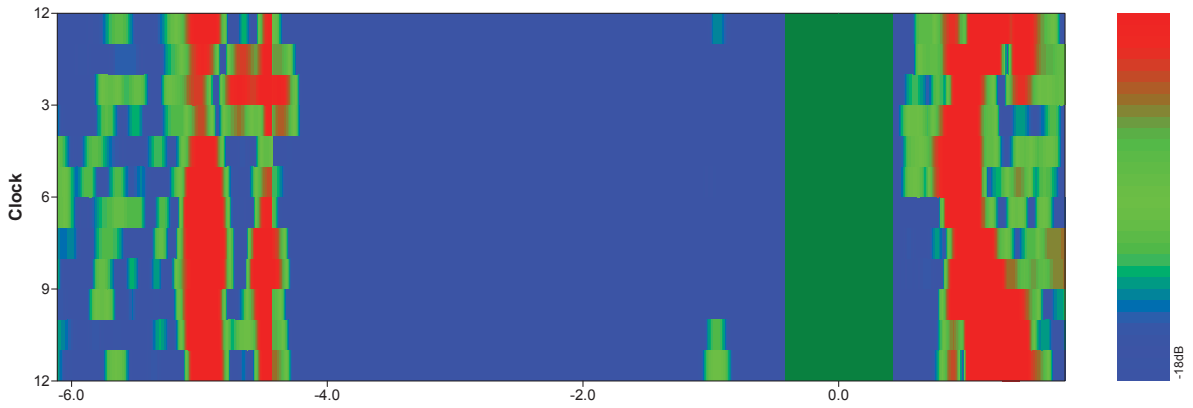
3.0 GUIDED WAVE REPORT

3.1 24"RESIDUAL FUEL OIL (RFO)



Test ID: G4-214#2203	Result: Minor Concern
Pipe: 14" RFO (S0)	Ring: R2B14(1525)
Site: Outside Terminal	Config: 8.2FR, T(0,1)
Location: Weld bend -0.23m	Calibration: Automatic (2935.84 mV)
Size: 14 inch (6.35mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4223'N, 144°40.9832'E
Tested: 12 Jun 2014 12:45	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 14" RFO-No.6 - Test Point No.: S0
 Positive direction with product flow.
 Found external localize corrosion at 6H00 closed to the bend weld.(refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:6.70 mm), (3 o'clock:6.56 mm), (6 o'clock:6.42 mm), (9 o'clock: 6.29 mm)





Test ID: G4-214#2203	Result: Minor Concern
Pipe: 14" RFO (S0)	Ring: R2B14(1525)
Site: Inside Terminal	Config: 8.2FR, T(0,1)
Location: Weld bend -0.23m	Calibration: Automatic (2935.84 mV)
Size: 14 inch (6.35mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4223'N, 144°40.9832'E
Tested: 12 Jun 2014 12:45	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
A1	-4.96	60	0.1	70	Minor	Visually confirm external corrosion closed to weld bend at 6H00 with max. pit depth is 0.06"@ 1.5 mm. UT reading adjacent to pit is 6.52 mm. Remaining wall thickness is 5.02 mm (23.0% wall loss)
R1	-0.96	-	0	60	Trailing Echoes	False echo
B1	-4.41	-	0	50	45 deg Bend	
B2	0.14	-	0	60	1D Bend	Datum of screening
F1	1.21	-	0	25	Flange	
U1	-5.6	-	~		End	



Ring location



General view of positive direction



Negative direction

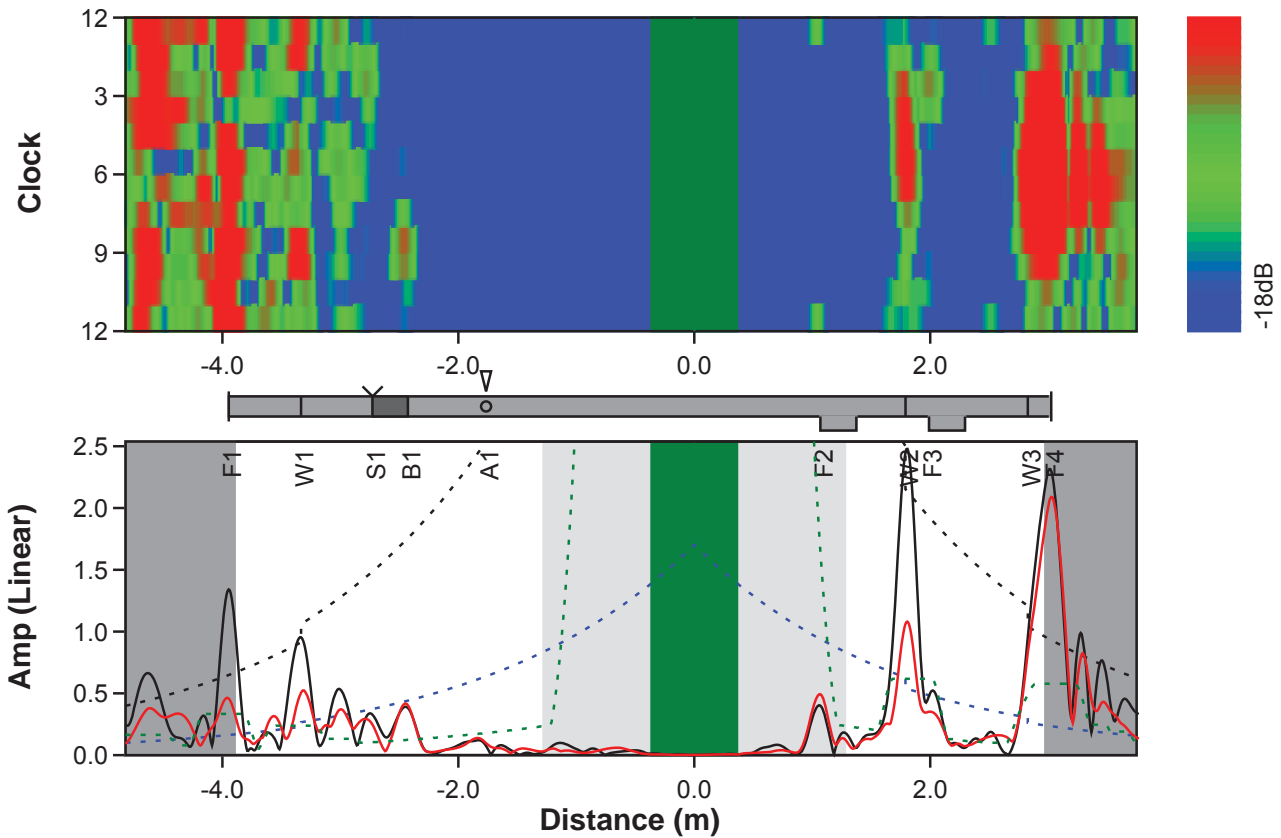


External corrosion at 6 o'clock



Test ID: G4-214#2174	Result: OK
Pipe: 24" RFO (S1)	Ring: R2B24(767)
Site: Outside Terminal	Config: 13.8FR, T(0,1)
Location: Weld +1.79 m	Calibration: Automatic (2654.16 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4217'N, 144°40.9808'E
Tested: 6 Jun 2014 08:57	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO No.6 - Test Point No.: S1
Positive direction with product flow.
No corrosion above the reporting level observed in the tested section of the pipe and found satisfactory.
(refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.20 mm), (3 o'clock:9.15 mm), (6 o'clock:9.20 mm), (9 o'clock: 9.15 mm)





Test ID: G4-214#2174	Result: OK
Pipe: 24" RFO (S1)	Ring: R2B24(767)
Site: Outside Terminal	Config: 13.8FR, T(0,1)
Location: Weld +1.79 m	Calibration: Automatic (2654.16 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4217'N, 144°40.9808'E
Tested: 6 Jun 2014 08:57	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
F1	-3.94	-	0	70	Flange	
W1	-3.33	-	0	45	Weld	
S1	-2.72	-	0	13	Reducer	24"x16"
B1	-2.42	-	0.3	0	Bend	
A1	-1.76	1	0	0	Anomaly	UT confirm, no significant finding (minimum thickness is 9.03 mm)
F2	1.06	-	0	0	Branch	
W2	1.79	20	0	60	Weld	Datum of screening
F3	1.99	-	0	40	Branch	
W3	2.82	-	0	18	Weld	
F4	3.02	-	0	10	Flange	



Ring location



Positive direction

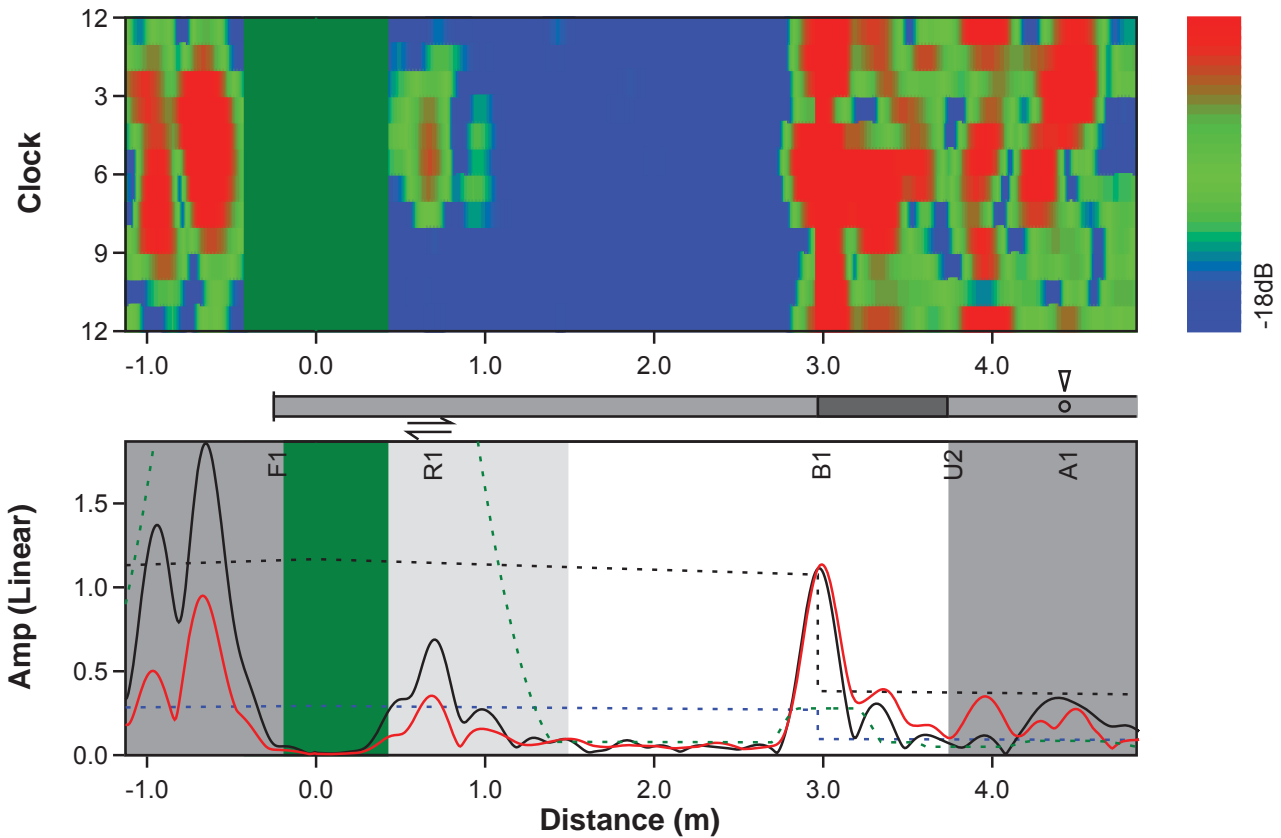


Negative direction



Test ID: G4-214#2176	Result: OK
Pipe: 24" RFO (S2)	Ring: R2B24(767)
Site: Outside Terminal	Config: 11.8FR, T(0,1)
Location: Flange -0.25 m	Calibration: Automatic (1255.11 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4234'N, 144°40.9816'E
Tested: 6 Jun 2014 10:11	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO No.6 - Test Point No.: S2
Positive direction with product flow.
No corrosion above the reporting level observed in the tested section of the pipe and found satisfactory.
(refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.15 mm), (3 o'clock:9.07 mm), (6 o'clock:9.20 mm), (9 o'clock: 9.07 mm)





Test ID: G4-214#2176	Result: OK
Pipe: 24" RFO (S2)	Ring: R2B24(767)
Site: Outside Terminal	Config: 11.8FR, T(0,1)
Location: Flange -0.25 m	Calibration: Automatic (1255.11 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4234'N, 144°40.9816'E
Tested: 6 Jun 2014 10:11	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
F1	-0.25	-	0	60	Flange	Datum of screening
R1	0.67	-	0	50	False Echo	Mirror signal
B1	2.96	-	0	0	45 deg Bend	
U2	3.74	-	~		End	
A1	4.42	20	0	20	Anomaly	



Ring location



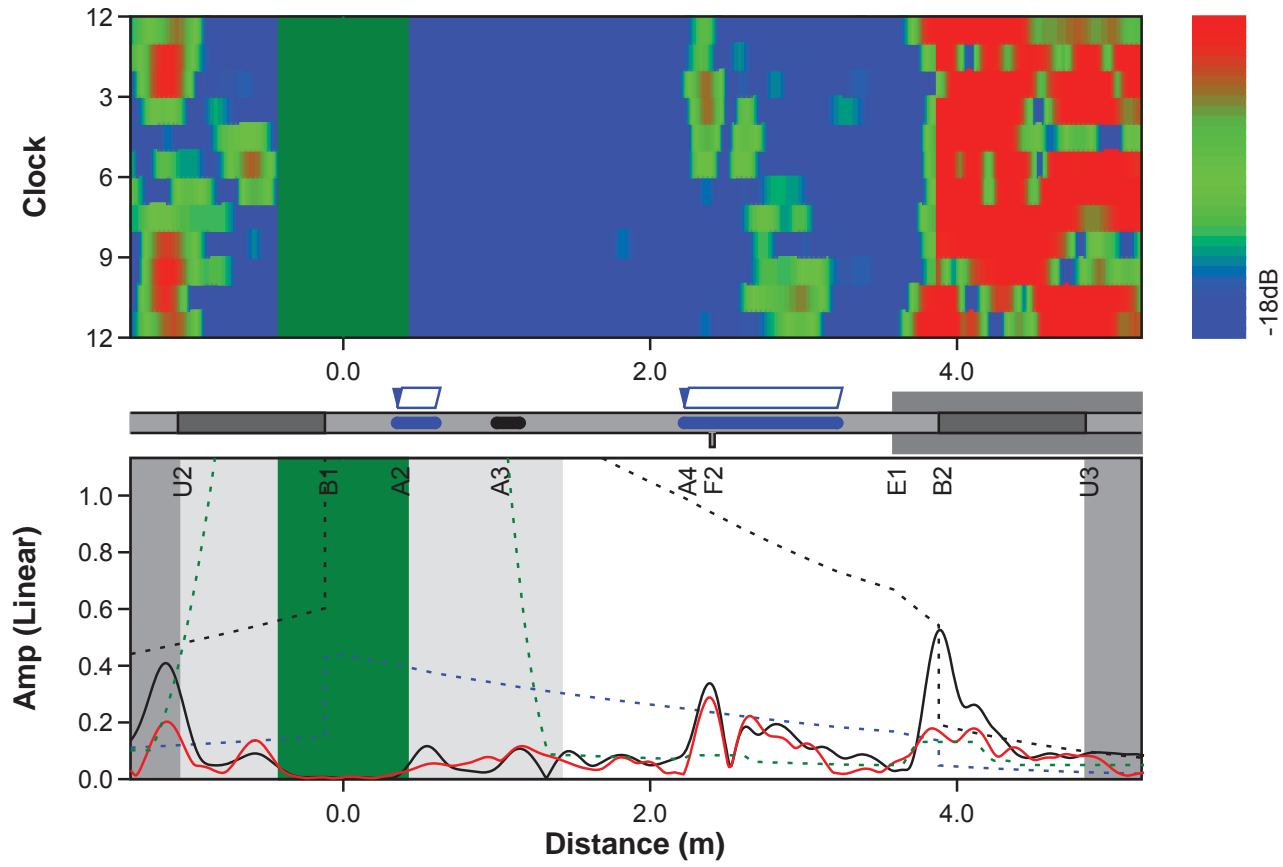
Positive direction



General view of negative direction

Test ID: G4-214#2197	Result: Medium Concern
Pipe: 24" RFO (STA 1)	Ring: R2B24(767)
Site: Inside Terminal	Config: 11.6FR, T(0,1)
Location: Weld bend 45 -0.14m	Calibration: Automatic (1565.38 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4262'N, 144°40.9856'E
Tested: 11 Jun 2014 12:31	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO-No.6 - Test Point No.: STA 1
 Positive direction with product flow.
 Found general external corrosion at several location. (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.28 mm), (3 o'clock:9.23 mm),
 (6 o'clock:9.35 mm), (9 o'clock: 9.27 mm)





Test ID: G4-214#2197	Result: Medium Concern
Pipe: 24" RFO (STA 1)	Ring: R2B24(767)
Site: Inside Terminal	Config: 11.6FR, T(0,1)
Location: Weld bend 45 -0.14m	Calibration: Automatic (1565.38 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4262'N, 144°40.9856'E
Tested: 11 Jun 2014 12:31	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
F1	-4.28	-	0	60	Flange	
U2	-1.07	-	~		End	
A1	-3.77	35	0	0	Anomaly	UT confirm no significant finding. Minimum remaining thickness is 9.25 mm.
B1	-0.12	-	0	15	45 deg Bend	Datum of screening
A2	0.35	1	0.25	30	Medium	Visually confirm external corrosion on the entire section with max. pit depth is 0.11"@ 2.8 mm. UT reading adjacent to pit is 9.28 mm. Remaining wall thickness is 6.48 mm (30.2% wall loss)
A3	1	1	0.15	0	Minor	Visually confirm external corrosion at 3H00 with max. pit depth is 0.08"@ 2.0 mm. UT reading adjacent to pit is 9.57 mm. Remaining wall thickness is 7.57 mm (20.9% wall loss)
A4	2.22	4	1	30	Medium	Visually confirm external corrosion on the entire section with max. pit depth is 0.14"@ 3.5 mm. UT reading adjacent to pit is 9.30 mm. Remaining wall thickness is 5.80 mm (37.6% wall loss)
F2	2.39	-	0	15	Drain	
E1	3.58	-	~	0	Earth	Underground
B2	3.88	-	0	70	45 deg Bend	
U3	4.83	-	~		End	



Ring location



Positive direction



Negative direction



External corrosion with max. pitting is 0.11" @ 2.8 mm



External corrosion with max. pitting is 0.14" @ 3.5 mm

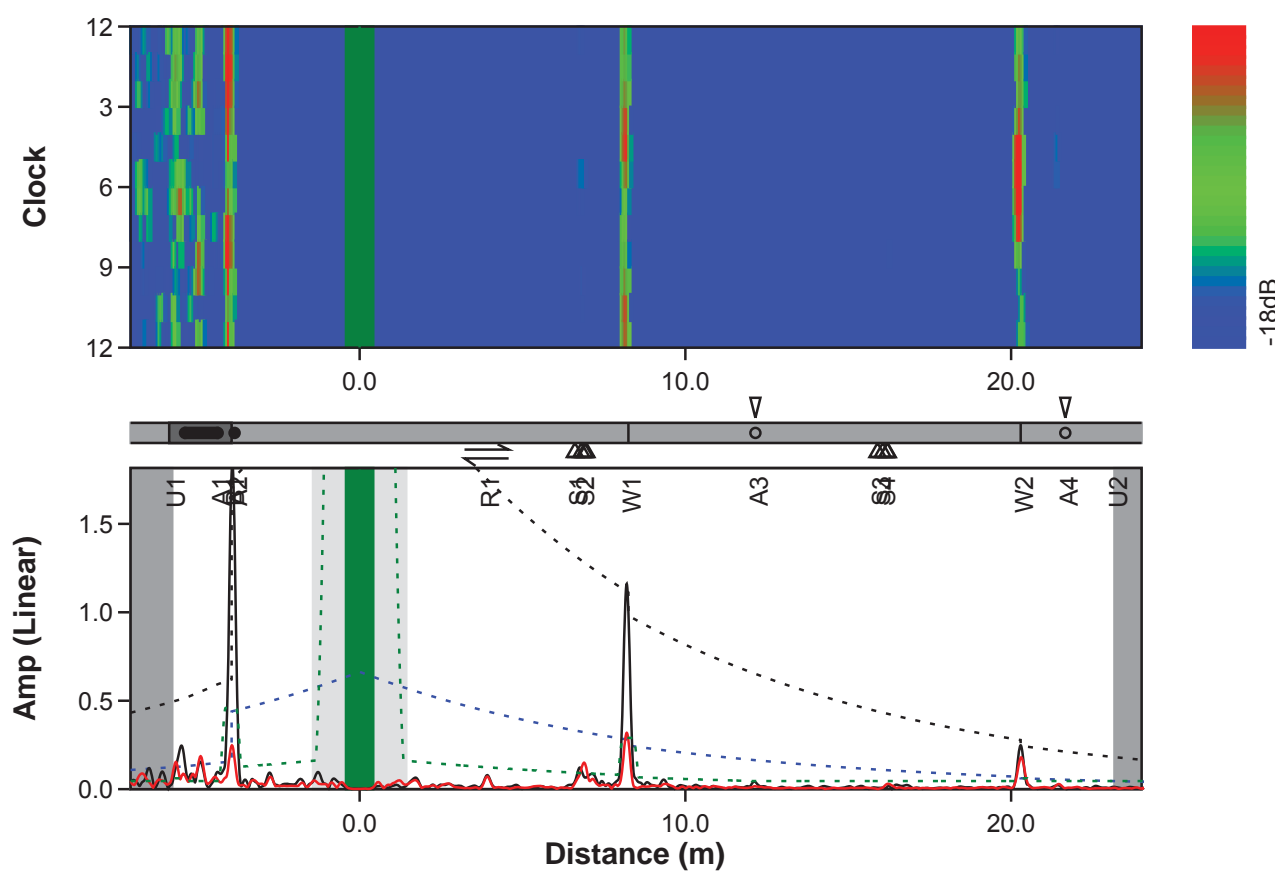


General view of external corrosion at soil to air interface



Test ID: G4-214#2177	Result: Minor Concern
Pipe: 24" RFO (S3)	Ring: R2B24(767)
Site: Outside Terminal	Config: 12.2FR, T(0,1)
Location: Bend weld -3.90 m	Calibration: Automatic (1412.7 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4480'N, 144°41.0046'E
Tested: 6 Jun 2014 12:53	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO-No.6 - Test Point No.: S3
Positive direction with product flow.
Found external corrosion closed to soil to air interface (refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.35 mm), (3 o'clock:9.32 mm), (6 o'clock:9.41 mm), (9 o'clock:9.36 mm)





Test ID: G4-214#2177	Result: Minor Concern
Pipe: 24" RFO (S3)	Ring: R2B24(767)
Site: Outside Terminal	Config: 12.2FR, T(0,1)
Location: Bend weld -3.90 m	Calibration: Automatic (1412.7 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4480'N, 144°41.0046'E
Tested: 6 Jun 2014 12:53	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-5.75	-	~		End	
A1	-4.35	4	1	30	Minor	General corrosion at 12 and 6H00 with less than 0.5 mm depth.
B1	-3.93	-	0	90	1D Bend	Datum of screening
A2	-3.83	25	0	90	Minor	Visually confirm external corrosion at 6H00 with max. pit depth is 0.05" @ 1.3 mm. UT reading adjacent to pit is 9.35 mm. Remaining wall thickness is 8.05 mm (13.9% wall loss)
R1	3.89	-	0	10	Mirror	
S1	6.61	-	0.3	25	Support	
S2	6.81	-	0.15	0	Clamp	
W1	8.25	25	0	70	Weld	
A3	12.15	2	0	60	Anomaly	UT confirm, no significant finding (minimum thickness is 9.25 mm)
S3	15.89	-	0.3	40	Support	
S4	16.05	-	0.15	25	Clamp	
W2	20.29	-	0	25	Weld	
A4	21.66	2	0	0	Anomaly	UT confirm, no significant finding (minimum thickness is 9.25 mm)
U2	23.17	-	~		End	
S5	26.02	-	0.3	30	Support	
S6	26.15	-	0.15	0	Clamp	



Ring location



Positive direction

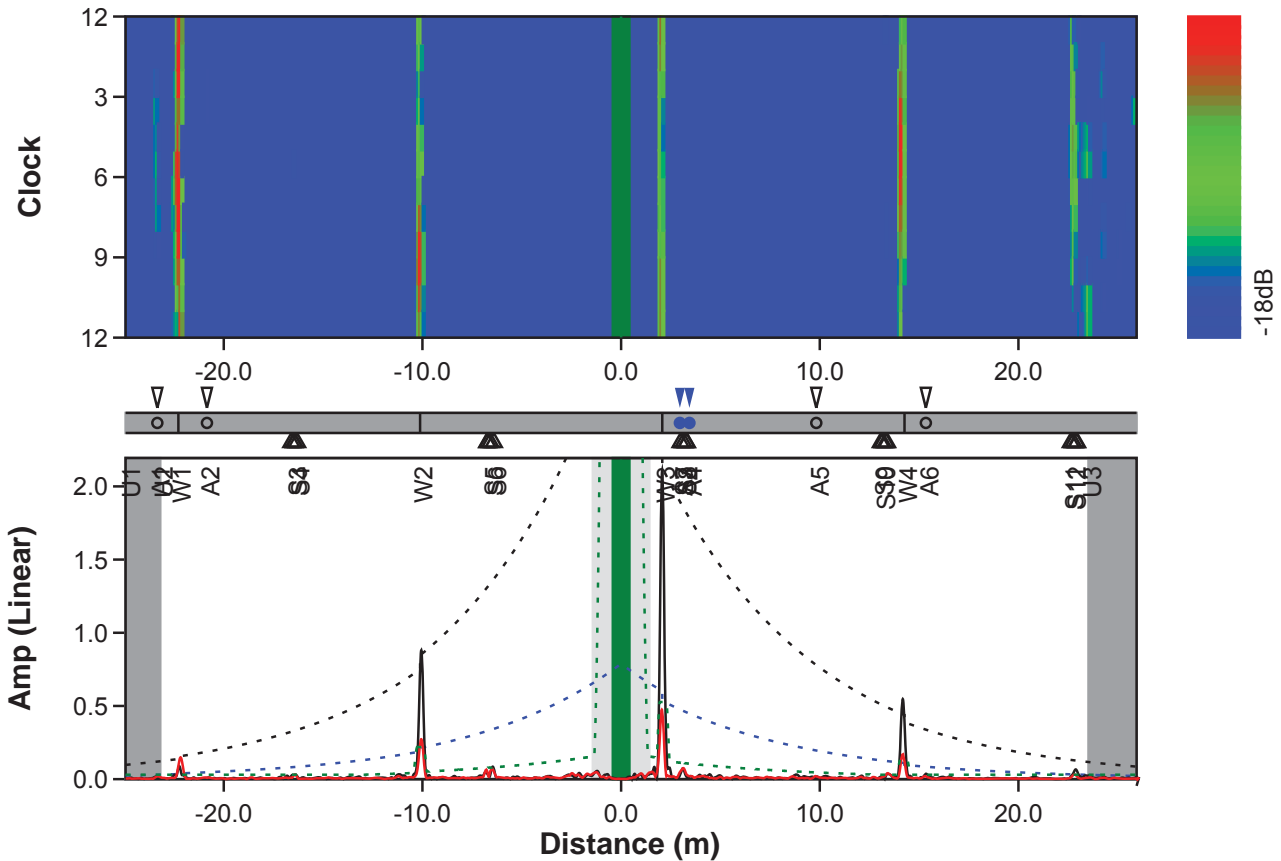


Negative direction



Test ID: G4-214#2178	Result: Medium Concern
Pipe: 24" RFO (S4)	Ring: R2B24(767)
Site: Outside Terminal	Config: 11.8FR, T(0,1)
Location: Bend weld +2.07 m	Calibration: Automatic (1439.55 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4687'N, 144°41.0107'E
Tested: 6 Jun 2014 13:52	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO-No.6 - Test Point No.: S4
 Positive direction with product flow.
 Found external localized corrosion closed to the pipe support (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.27 mm), (3 o'clock:9.38 mm), (6 o'clock:9.35 mm), (9 o'clock:9.32 mm)





Test ID: G4-214#2178	Result: Medium Concern
Pipe: 24" RFO (S4)	Ring: R2B24(767)
Site: Outside Terminal	Config: 11.8FR, T(0,1)
Location: Bend weld +2.07 m	Calibration: Automatic (1439.55 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4687'N, 144°41.0107'E
Tested: 6 Jun 2014 13:52	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
S1	-26.13	-	0.15	40	Clamp	
S2	-26	-	0.3	45	Support	
U1	-24.84	-	~		End	
A1	-23.34	4	0	0	Anomaly	UT confirm, no significant finding (minimum thickness is 9.30 mm)
U2	-23.19	-	~		End	
W1	-22.28	-	0	0	Weld	
A2	-20.84	1	0	4	Anomaly	UT confirm, no significant finding (minimum thickness is 9.25 mm)
S3	-16.44	-	0.15	3	Clamp	
S4	-16.31	-	0.15	12	Support	
W2	-10.11	25	0	70	Weld	
S5	-6.58	-	0.15	0	Clamp	
S6	-6.41	-	0.3	20	Saddle	
W3	2.07	20	0	80	Weld	Datum of screening
A3	2.95	1	0	0	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 9.35 mm. Remaining wall thickness is 6.85 mm (26.7% wall loss)
S7	3	-	0.3	0	Support	
S8	3.14	-	0.15	0	Clamp	
A4	3.43	0	0	0	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 9.35 mm. Remaining wall thickness is 6.85mm (26.7% wall loss)
A5	9.82	1	0	0	Anomaly	UT confirm, no significant finding (minimum thickness is 9.16 mm)



Test ID: G4-214#2178	Result: Medium Concern
Pipe: 24" RFO (S4)	Ring: R2B24(767)
Site: Outside Terminal	Config: 11.8FR, T(0,1)
Location: Bend weld +2.07 m	Calibration: Automatic (1439.55 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4687'N, 144°41.0107'E
Tested: 6 Jun 2014 13:52	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
S9	13.08	-	0.3	35	Support	
S10	13.17	-	0.15	16	Clamp	
W4	14.26	30	0	70	Weld	
A6	15.34	3	0	45	Anomaly	UT confirm, no significant finding (minimum thickness is 9.14 mm)
S11	22.64	-	0.3	30	Support	
S12	22.76	-	0.15	45	Clamp	
U3	23.52	-	~		End	
W5	26.47	60	0	80	Weld	
U4	27.07	-	~		End	



Ring location



Positive direction

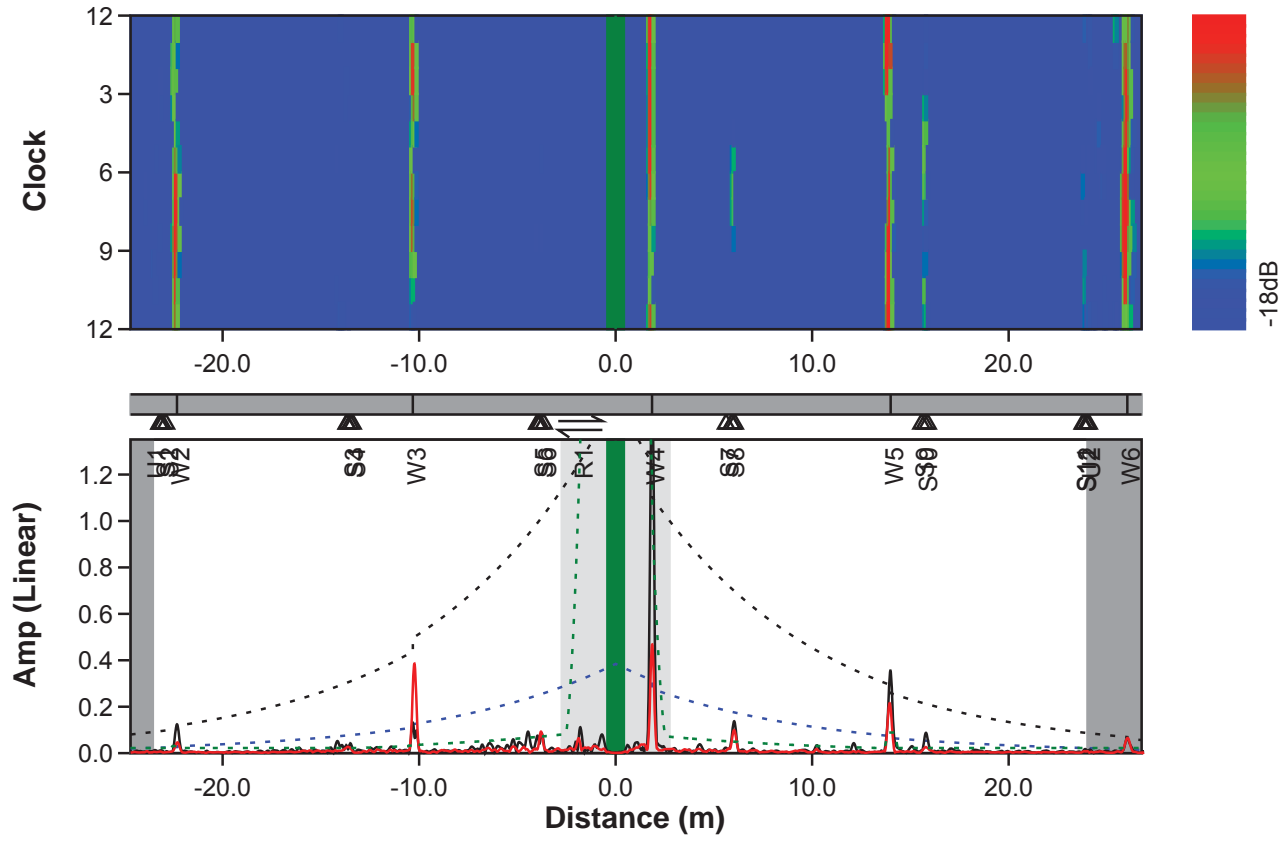


Negative direction



Test ID: G4-214#2179	Result: OK
Pipe: 24" RFO (S5)	Ring: R2B24(767)
Site: Outside Terminal	Config: 12.2FR, T(0,1)
Location: Weldeld +1.85 m	Calibration: Automatic (1388.45 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4855'N, 144°41.0213'E
Tested: 7 Jun 2014 07:54	Client: VITAL Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO No.6 - Test Point No.: S5
Positive direction with product flow.
No corrosion above the reporting level observed in the tested section of the pipe and found satisfactory.
(refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.25 mm), (3 o'clock:9.27 mm), (6 o'clock:9.31 mm), (9 o'clock: 9.19 mm)





Test ID: G4-214#2179	Result: OK
Pipe: 24" RFO (S5)	Ring: R2B24(767)
Site: Outside Terminal	Config: 12.2FR, T(0,1)
Location: Weldeld +1.85 m	Calibration: Automatic (1388.45 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.4855'N, 144°41.0213'E
Tested: 7 Jun 2014 07:54	Client: VITAL Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
W1	-34.4	-	0	35	Weld	
U1	-23.55	-	~		End	
S1	-23.06	-	0.15	50	Clamp	
S2	-22.88	-	0.3	45	Support	
W2	-22.32	25	0	60	Weld	
S3	-13.5	-	0.15	40	Clamp	
S4	-13.38	-	0.3	60	Support	
W3	-10.31	6	0	0	Weld	
S5	-3.83	-	0.15	0	Clamp	
S6	-3.65	-	0.3	16	Support	
R1	-1.79	-	0	45	Mirror	False echo
W4	1.85	30	0	70	Weld	Datum of screening
S7	5.62	-	0.3	35	Support	
S8	5.91	-	0.15	25	Clamp	
W5	13.99	25	0	40	Weld	
S9	15.56	-	0	9	Support	
S10	15.72	-	0.15	70	Clamp	
S11	23.77	-	0.3	40	Support	
S12	23.82	-	0.15	50	Clamp	
U2	24.01	-	~		End	
W6	26.04	-	0	0	Weld	



Ring location



Positive direction

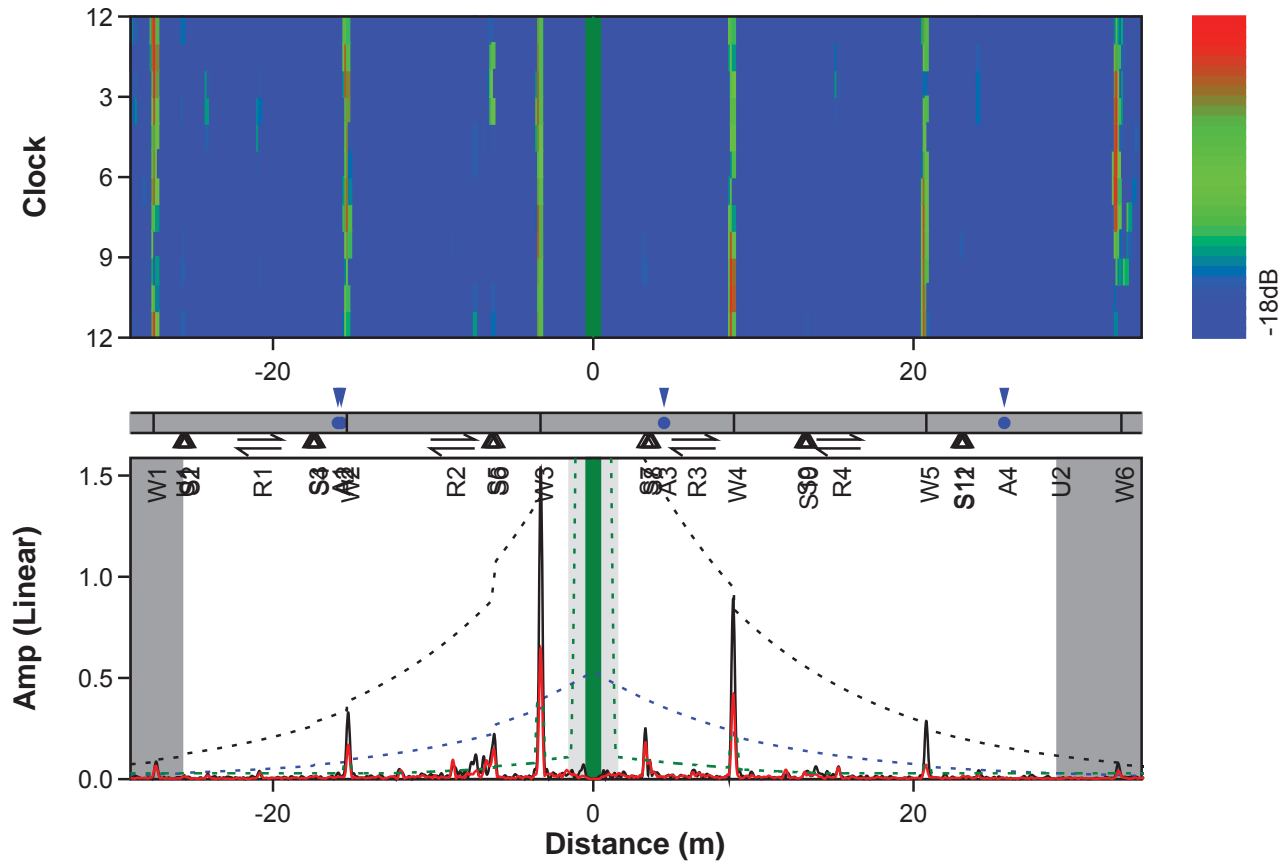


Negative direction



Test ID: G4-214#2183	Result: Medium Concern
Pipe: 24" RFO (S6)	Ring: R2B24(767)
Site: Outside Terminal	Config: 11.6FR, T(0,1)
Location: Weldeld -3.29 m	Calibration: Automatic (1076.33 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.5077'N, 144°41.0257'E
Tested: 7 Jun 2014 08:46	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO-No.6 - Test Point No.: S6
 Positive direction with product flow.
 Found external localized corrosion at several corrosion (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.27 mm), (3 o'clock:9.26 mm), (6 o'clock:9.32 mm), (9 o'clock:9.28 mm)





Test ID: G4-214#2183	Result: Medium Concern
Pipe: 24" RFO (S6)	Ring: R2B24(767)
Site: Outside Terminal	Config: 11.6FR, T(0,1)
Location: Weldeld -3.29 m	Calibration: Automatic (1076.33 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.5077'N, 144°41.0257'E
Tested: 7 Jun 2014 08:46	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
W1	-27.45	-	0	25	Weld	
U1	-25.68	-	~		End	
S1	-25.48	-	0.15	25	Clamp	
S2	-25.38	-	0.3	35	Support	
R1	-20.84	-	0	18	Mirror	False echo
S3	-17.39	-	0.15	0	Clamp	
S4	-17.29	-	0.3	0	Support	
A1	-15.95	2	0	60	Medium	Visually confirm external corrosion at 2H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 9.14 mm. Remaining wall thickness is 6.64 mm (27.4% wall loss)
A2	-15.74	1	0	30	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 9.10 mm. Remaining wall thickness is 6.60 mm (27.5% wall loss)
W2	-15.38	20	0	50	Weld	
R2	-8.78	-	0	0	Mirror	False echo
S5	-6.25	-	0.15	35	Clamp	
S6	-6.07	-	0.3	50	Support	
W3	-3.29	-	0	60	Weld	Datum of screening
S7	3.27	-	0.3	25	Support	
S8	3.5	-	0.15	1	Clamp	
A3	4.42	0	0	0	Medium	Visually confirm isolated corrosion at 6H00 with max. pit depth is 0.12"@ 3.0 mm. UT reading adjacent to pit is 9.13 mm. Remaining wall thickness is 6.13 mm (32.9% wall loss)
R3	6.26	-	0	25	Mirror	False echo



Test ID: G4-214#2183	Result: Medium Concern
Pipe: 24" RFO (S6)	Ring: R2B24(767)
Site: Outside Terminal	Config: 11.6FR, T(0,1)
Location: Weldeld -3.29 m	Calibration: Automatic (1076.33 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.5077'N, 144°41.0257'E
Tested: 7 Jun 2014 08:46	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
W4	8.78	20	0	50	Weld	
S9	13.13	-	0.3	0	Support	
S10	13.23	-	0.15	0	Clamp	
R4	15.31	-	0	9	Mirror	False echo
W5	20.8	-	0	80	Weld	
S11	22.9	-	0.3	0	Support	
S12	23	-	0.15	0	Clamp	
A4	25.67	1	0	4	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.10" @ 2.5 mm. UT reading adjacent to pit is 9.27 mm. Remaining wall thickness is 6.77 mm (26.9% wall loss)
U2	28.99	-	~		End	
W6	32.98	-	0	50	Weld	



Ring location



Positive direction

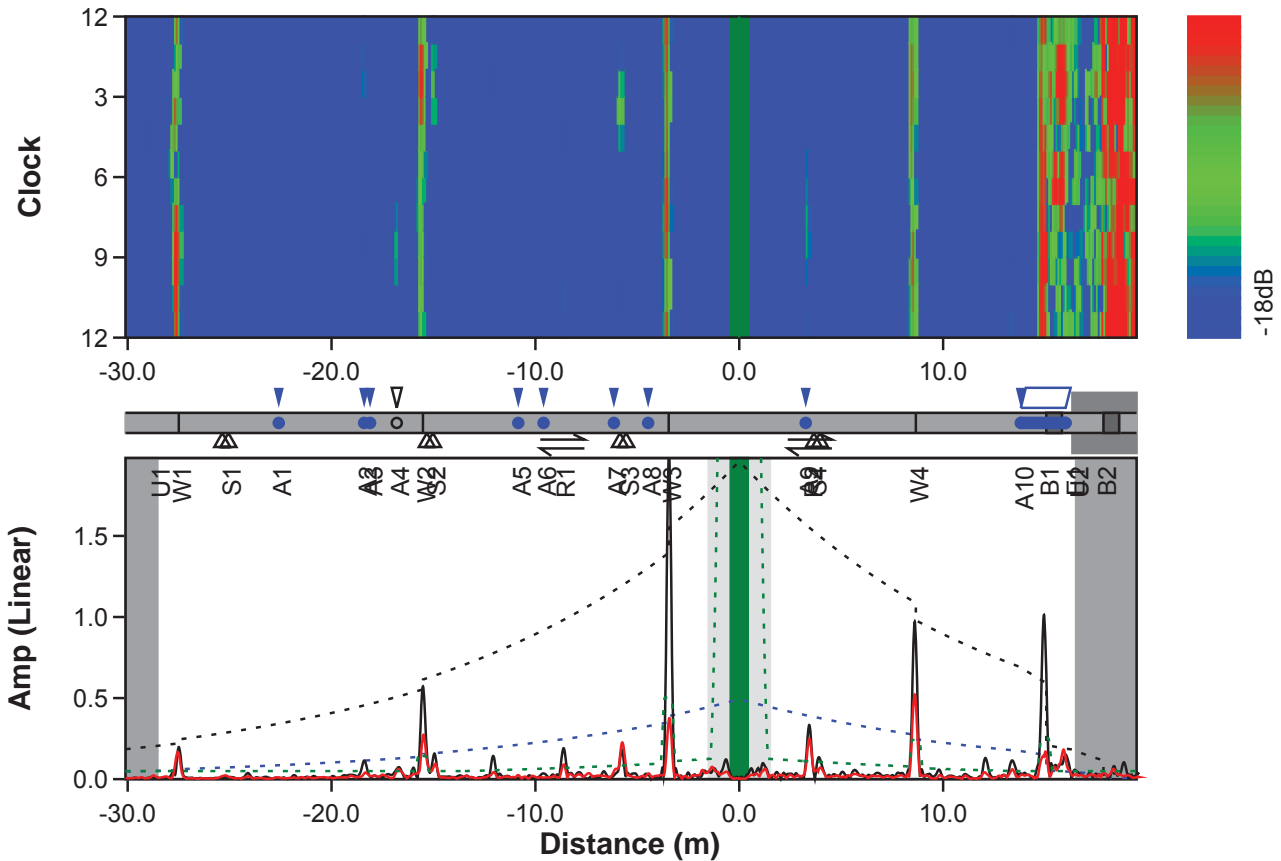


Negative direction



Test ID: G4-214#2184	Result: Medium Concern
Pipe: 24" RFO (S7)	Ring: R2B24(767)
Site: Outside Terminal	Config: 10.6FR, T(0,1)
Location: Weldeld -3.46 m	Calibration: Automatic (1163.32 mV)
Size: 24 inch (9.35mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.5248'N, 144°41.0413'E
Tested: 7 Jun 2014 12:43	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO-No.6 - Test Point No.: S7
 Positive direction with product flow.
 Found external corrosion at several corrosion (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.25 mm), (3 o'clock:9.24 mm), (6 o'clock:9.31 mm), (9 o'clock:9.28 mm)





Test ID: G4-214#2184	Result: Medium Concern
Pipe: 24" RFO (S7)	Ring: R2B24(767)
Site: Outside Terminal	Config: 10.6FR, T(0,1)
Location: Weldeld -3.46 m	Calibration: Automatic (1163.32 mV)
Size: 24 inch (9.35mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.5248'N, 144°41.0413'E
Tested: 7 Jun 2014 12:43	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-28.54	-	~		End	
W1	-27.49	-	0	15	Weld	
S1	-25.06	-	0.3	19	Support	
A1	-22.59	1	0	0	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 9.27 mm. Remaining wall thickness is 6.77 mm (26.9% wall loss)
A2	-18.4	6	0	60	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.08"@ 2.0 mm. UT reading adjacent to pit is 9.35 mm. Remaining wall thickness is 7.35 mm (21.4% wall loss)
A3	-18.11	1	0	13	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 9.45 mm. Remaining wall thickness is 6.95 mm (26.5% wall loss)
A4	-16.8	3	0	14	Anomaly	UT confirm no significant finding. (minimum thickness is 9.15 mm)
W2	-15.51	-	0	50	Weld	
S2	-15.02	-	0.3	40	Support	
A5	-10.84	0	0	0	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.13"@ 3.3 mm. UT reading adjacent to pit is 9.25 mm. Remaining wall thickness is 5.93 mm (35.9% wall loss)
A6	-9.6	1	0	70	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.08"@ 2.0 mm. UT reading adjacent to pit is 9.36 mm. Remaining wall thickness is 7.36 mm (21.4% wall loss)



Test ID: G4-214#2184	Result: Medium Concern
Pipe: 24" RFO (S7)	Ring: R2B24(767)
Site: Outside Terminal	Config: 10.6FR, T(0,1)
Location: Weldeld -3.46 m	Calibration: Automatic (1163.32 mV)
Size: 24 inch (9.35mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.5248'N, 144°41.0413'E
Tested: 7 Jun 2014 12:43	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
R1	-8.67	-	0	50	Mirror	
A7	-6.15	1	0	0	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.13"@ 3.3 mm. UT reading adjacent to pit is 9.35 mm. Remaining wall thickness is 6.05 mm (35.3% wallloss)
S3	-5.55	-	0.3	0	Support	
A8	-4.47	1	0	0	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.08"@ 2.0 mm. UT reading adjacent to pit is 9.41 mm. Remaining wall thickness is 7.41 mm (21.2% wall loss)
W3	-3.46	30	0	80	Weld	Datum of screening
A9	3.26	3	0	30	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.12"@ 3.0 mm. UT reading adjacent to pit is 9.42 mm. Remaining wall thickness is 6.42 mm (31.8% wall loss)
R2	3.46	-	0	25	Mirror	False echo
S4	3.66	-	0.3	9	Support	
W4	8.66	20	0	45	Weld	
A10	13.81	1	2.2	20	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.13"@ 3.3 mm. UT reading adjacent to pit is 9.21 mm. Remaining wall thickness is 5.91 mm (35.8% wall loss)
B1	15.05	-	0	80	45 deg Bend	
E1	16.34	-	~	40	Earth	



Test ID: G4-214#2184	Result: Medium Concern
Pipe: 24" RFO (S7)	Ring: R2B24(767)
Site: Outside Terminal	Config: 10.6FR, T(0,1)
Location: Weldeld -3.46 m	Calibration: Automatic (1163.32 mV)
Size: 24 inch (9.35mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.5248'N, 144°41.0413'E
Tested: 7 Jun 2014 12:43	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
U2	16.52	-	~		End	
B2	17.86	-	0	0	45 deg Bend	



Ring location



Positive direction

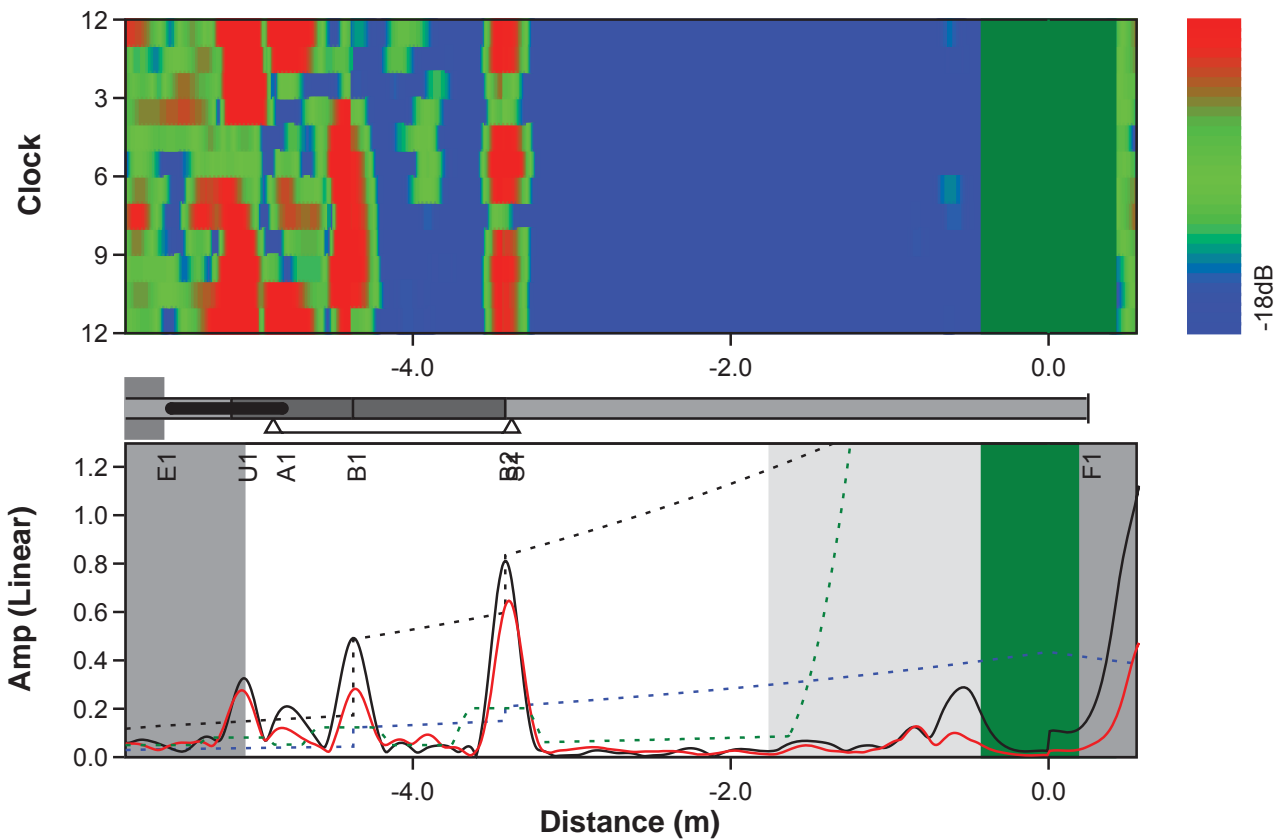


Negative direction



Test ID: G4-214#2185	Result: Minor Concern
Pipe: 24" RFO (S8)	Ring: R2B24(767)
Site: Inside Terminal	Config: 12.8FR, T(0,1)
Location: Flange +0.25 m	Calibration: Automatic (1400.05 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6211'N, 144°41.1099'E
Tested: 9 Jun 2014 08:10	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO-No.6 - Test Point No.: S8
Positive direction with product flow.
Found scattered external corrosion at soil to air interface closed to the pipe support.
(refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.31 mm), (3 o'clock:9.41 mm),
(6 o'clock:9.27 mm), (9 o'clock: 9.41 mm)





Test ID: G4-214#2185	Result: Minor Concern
Pipe: 24" RFO (S8)	Ring: R2B24(767)
Site: Inside Terminal	Config: 12.8FR, T(0,1)
Location: Flange +0.25 m	Calibration: Automatic (1400.05 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6211'N, 144°41.1099'E
Tested: 9 Jun 2014 08:10	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
E1	-5.57	-	~	18	Earth	Underground
U1	-5.06	-	~		End	
A1	-4.82	30	0.7	40	Minor	Visually confirm scattered corrosion with maximum pit depth is 0.08" (2.0 mm) - UT adjacent to corrosion 9.34 mm. Remaining wall thickness is 7.34mm. (21.4% wall loss)
B1	-4.37	-	0.69	45	45 deg Bend	
S1	-3.37	-	1.5	20	Support	
B2	-3.41	-	0	20	45 deg Bend	
F1	0.25	-	0	70	Flange	Datum of screening



Ring location



General view of positive direction



Negative direction

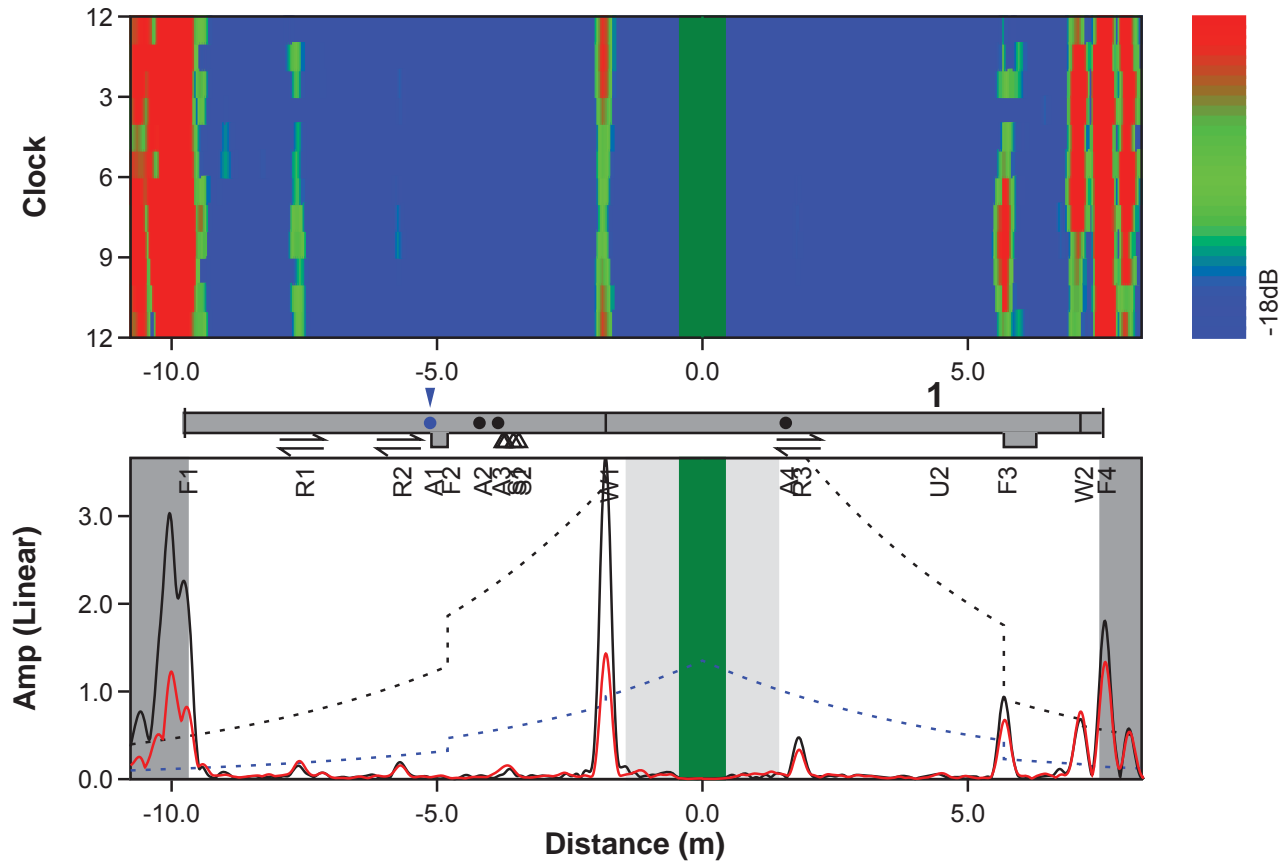


Scattered corrosion with maximum pit depth is 0.08" @ 2.0 mm



Test ID: G4-214#2186	Result: Medium Concern
Pipe: 24" RFO (S9)	Ring: R2B24(767)
Site: Inside Terminal	Config: 11.4FR, T(0,1)
Location: Weld -1.80 m	Calibration: Automatic (1708.13 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6181'N, 144°41.1158'E
Tested: 9 Jun 2014 08:53	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO-No.6 - Test Point No.: S9
 Positive direction with product flow.
 Found external localize corrosion at several location (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.51 mm), (3 o'clock:9.49 mm), (6 o'clock:9.48 mm), (9 o'clock: 9.40 mm)





Test ID: G4-214#2186	Result: Medium Concern
Pipe: 24" RFO (S9)	Ring: R2B24(767)
Site: Inside Terminal	Config: 11.4FR, T(0,1)
Location: Weld -1.80 m	Calibration: Automatic (1708.13 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6181'N, 144°41.1158'E
Tested: 9 Jun 2014 08:53	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
F1	-9.75	-	0	60	Flange	
R1	-7.54	-	0	0	Mirror	False echo
R2	-5.71	-	0	19	Mirror	False echo
A1	-5.13	1	0	14	Medium	Visually confirm localized external corrosion at 6H00 with max. depth is 0.17" @ 4.3 mm. UT reading adjacent to pit is 9.42 mm. Remaining wall thickness is 5.12 mm (45.6% wall loss)
F2	-4.8	-	0	0	Branch	branch 14" to 24"
A2	-4.2	0	0	40	Minor	Visually confirm localized external corrosion at 6H00 with max. depth is 0.05" @ 1.27 mm. UT reading adjacent to pit is 9.59 mm. Remaining wall thickness is 8.32 mm (13.2% wall loss)
A3	-3.85	1	0	0	Minor	Visually confirm localized external corrosion at 6H00 with max. depth is 0.07" @ 1.8 mm. UT reading adjacent to pit is 9.59 mm. Remaining wall thickness is 7.79 mm (18.8% wall loss)
S1	-3.56	-	0.15	0	Clamp	
S2	-3.46	-	0.3	0	Support	
W1	-1.82	20	0	60	Weld	
A4	1.57	0	0	30	Minor	
R3	1.81	-	0	30	Mirror	
U2	4.4	-	0	0	User1	insert patch plate (0.12x0.12 m)
F3	5.67	-	0	30	Y	
W2	7.12	-	0	0	Weld	
F4	7.54	-	0	25	Flange	*End cap



Ring location



Positive direction



Negative direction

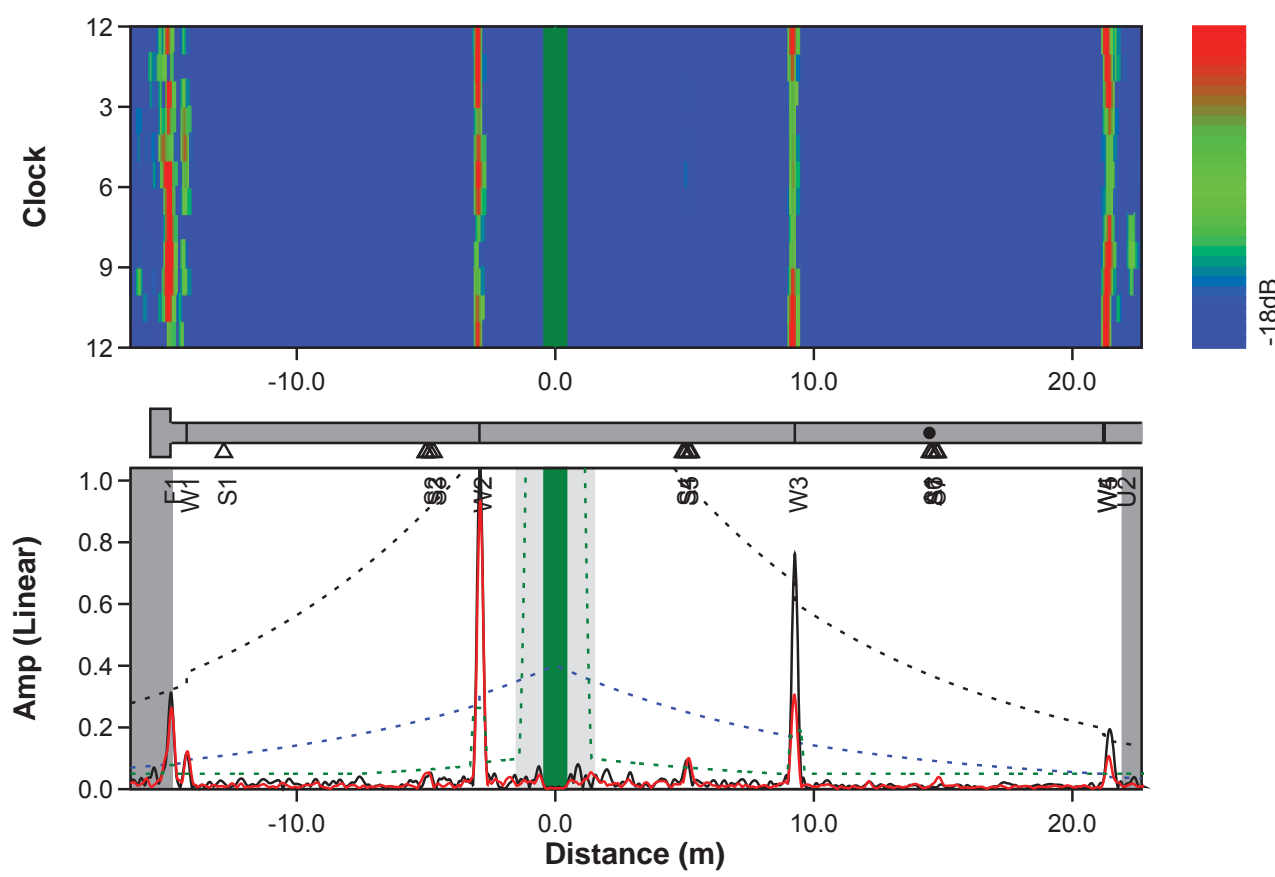


Localized external corrosion at 6H00. Max. pit depth: 0.17" @ 4.3 mm



Test ID: G4-214#2187	Result: Minor Concern
Pipe: 24" RFO (S10)	Ring: R2B24(767)
Site: Inside Terminal	Config: 10.6FR, T(0,1)
Location: Weld -2.93 m	Calibration: Automatic (1122.78 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6228'N, 144°41.1227'E
Tested: 9 Jun 2014 09:50	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO-No.6 - Test Point No.: S10
Positive direction with product flow.
Found external localize corrosion close to the pipe support (refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.58 mm), (3 o'clock:9.57 mm), (6 o'clock:9.49 mm), (9 o'clock: 9.25 mm)





Test ID: G4-214#2187	Result: Minor Concern
Pipe: 24" RFO (S10)	Ring: R2B24(767)
Site: Inside Terminal	Config: 10.6FR, T(0,1)
Location: Weld -2.93 m	Calibration: Automatic (1122.78 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6228'N, 144°41.1227'E
Tested: 9 Jun 2014 09:50	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
F1	-14.88	-	0	16	T	
W1	-14.25	-	0	0	Weld	
S1	-12.82	-	0	60	Support	
S2	-4.84	-	0.15	0	Clamp	
S3	-4.71	-	0.3	40	Support	
W2	-2.93	20	0	12	Weld	Datum of screening
S4	4.94	-	0.3	45	Support	
S5	5.04	-	0.15	4	Clamp	
W3	9.26	25	0	60	Weld	
A1	14.47	0	0	0	Minor	Visually confirm localized external corrosion at 6H00 with max. depth is 0.07" @ 1.8 mm. UT reading adjacent to pit is 9.45 mm. Remaining wall thickness is 7.65 mm (19.0% wall loss)
S6	14.49	-	0.3	0	Support	
S7	14.6	-	0.15	0	Clamp	
W4	21.19	-	0	20	Weld	
W5	21.25	-	0	35	Weld	
U2	21.95	-	~		End	



Ring location



Positive direction



Negative direction

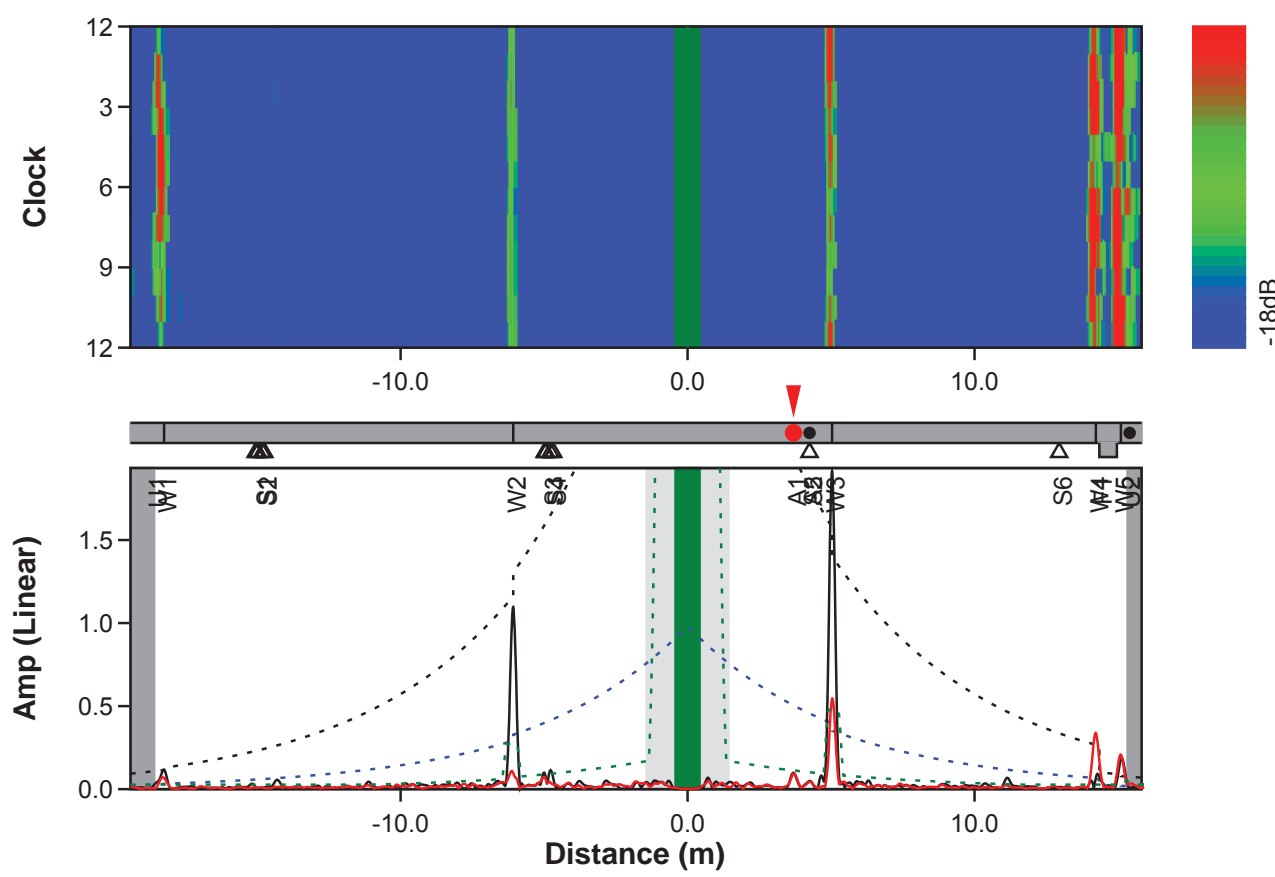


External corrosion near to pipe support



Test ID: G4-214#2188	Result: Major Concern
Pipe: 24" RFO (S11)	Ring: R2B24(767)
Site: Inside Terminal	Config: 11.6FR, T(0,1)
Location: Weld -6.07 m	Calibration: Automatic (1516.9 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6417'N, 144°41.1418'E
Tested: 9 Jun 2014 12:27	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 24" RFO-No.6 - Test Point No.: S11
Positive direction with product flow.
Found external localize corrosion at several location (refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.23 mm), (3 o'clock:9.21 mm), (6 o'clock:9.60 mm), (9 o'clock: 9.60 mm)





Test ID: G4-214#2188	Result: Major Concern
Pipe: 24" RFO (S11)	Ring: R2B24(767)
Site: Inside Terminal	Config: 11.6FR, T(0,1)
Location: Weld -6.07 m	Calibration: Automatic (1516.9 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6417'N, 144°41.1418'E
Tested: 9 Jun 2014 12:27	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-18.58	-	~		End	
W1	-18.24	-	0	40	Weld	
S1	-14.82	-	0.15	0	Clamp	
S2	-14.75	-	0.3	20	Support	
W2	-6.07	19	0	90	Weld	Datum of screening
S3	-4.78	-	0.15	60	Clamp	
S4	-4.68	-	0.3	70	Support	
A1	3.69	1	0	6	Severe	Visually confirm localized external corrosion at 6H00 with max. depth is 0.20" @ 5.1 mm. UT reading adjacent to pit is 9.60 mm. Remaining wall thickness is 4.5 mm (53.1% wall loss)
S5	4.25	-	0	16	Support	
A2	4.25	1	0	9	Minor	External corrosion under pipe support
W3	5.03	25	0	70	Weld	
S6	12.94	-	0	25	Support	
W4	14.22	-	0	0	Weld	
F1	14.35	-	0	0	Y	
W5	15.1	-	0	0	Weld	
U2	15.33	-	~		End	



Ring location



Positive direction



Negative direction

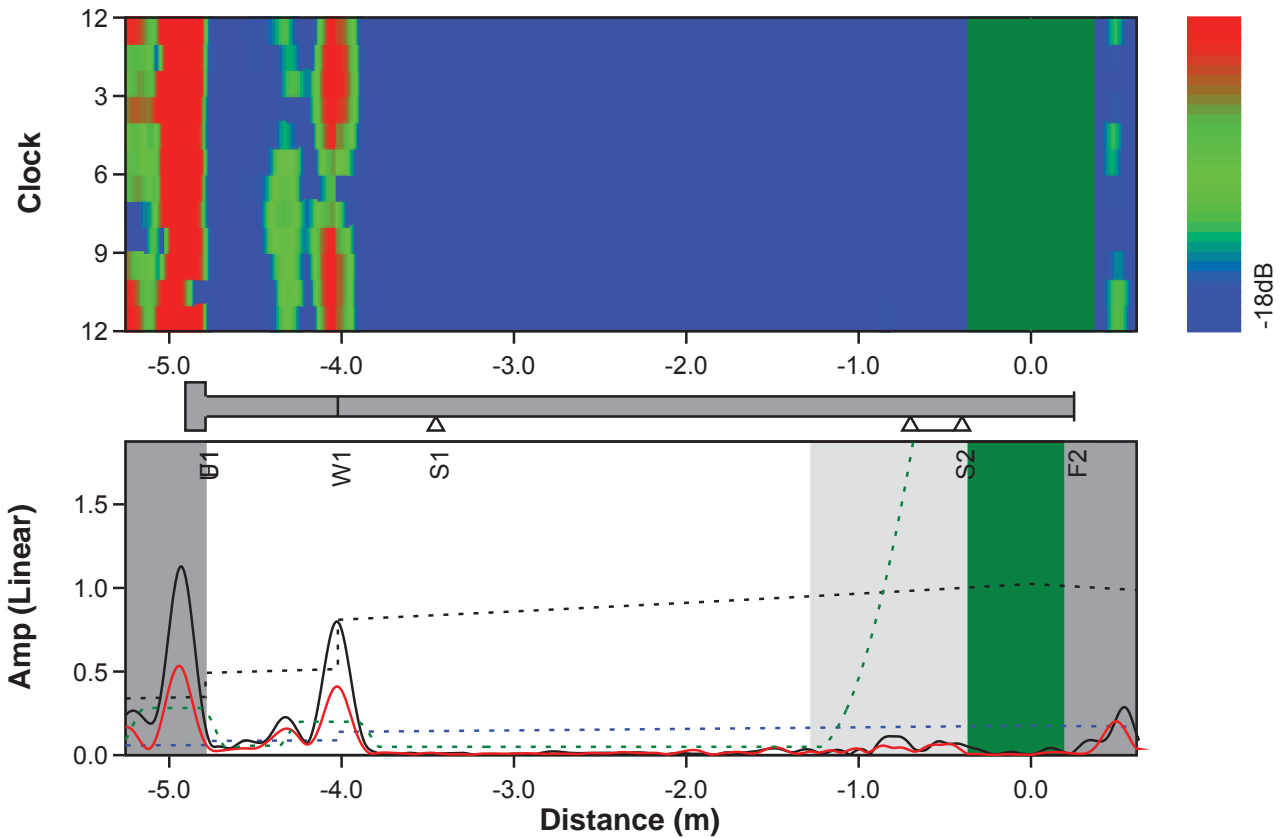


Isolated external corrosion at 6H00 near the pipe support



Test ID: G4-214#2189	Result: OK
Pipe: 24" RFO (S12)	Ring: R2B24(767)
Site: Inside Terminal	Config: 14.6FR, T(0,1)
Location: Flange +0.25 m	Calibration: Automatic (1361.37 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6380'N, 144°41.1523'E
Tested: 9 Jun 2014 13:15	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=33%

General Notes: 24" RFO-No.6 - Test Point No.: S12
Positive direction with product flow.
No corrosion above the reporting level observed in the tested section of the pipe and found satisfactory.
(refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.62 mm), (3 o'clock:9.34 mm), (6 o'clock:9.61 mm), (9 o'clock: 9.46 mm)





Test ID: G4-214#2189	Result: OK
Pipe: 24" RFO (S12)	Ring: R2B24(767)
Site: Inside Terminal	Config: 14.6FR, T(0,1)
Location: Flange +0.25 m	Calibration: Automatic (1361.37 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6380'N, 144°41.1523'E
Tested: 9 Jun 2014 13:15	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=33%

Feature	Location	ECL	Length	Extent	Class	Notes
F1	-4.79	-	0	60	T	
U1	-4.79	-	~		End	
W1	-4.02	-	0	50	Weld	
S1	-3.45	-	0	0	Support	
S2	-0.4	-	0.3	6	Support	
F2	0.25	-	0	80	Flange	Datum of screening



Ring location



General view of positive direction - to tank 1934

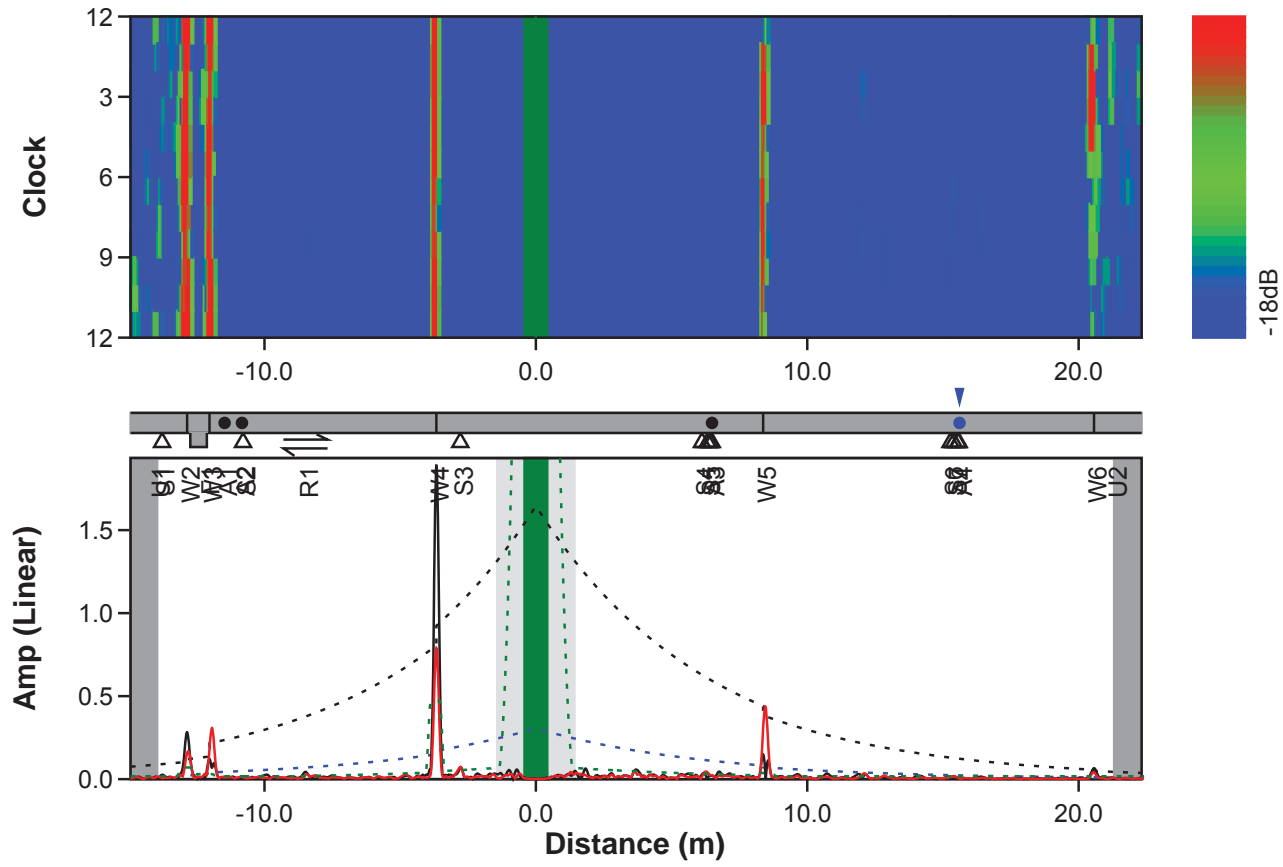


Negative direction



Test ID: G4-214#2190	Result: Medium Concern
Pipe: 24" RFO (S13)	Ring: R2B24(767)
Site: Inside Terminal	Config: 13.0FR, T(0,1)
Location: Weld -3.63 m	Calibration: Automatic (1595.89 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6394'N, 144°41.1567'E
Tested: 10 Jun 2014 07:22	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=30%

General Notes: 24" RFO-No.6 - Test Point No.: S13
 Positive direction with product flow.
 Found external localize corrosion at several location (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.57 mm), (3 o'clock:9.60 mm),
 (6 o'clock:9.07 mm), (9 o'clock: 9.60 mm)





Test ID: G4-214#2190	Result: Medium Concern
Pipe: 24" RFO (S13)	Ring: R2B24(767)
Site: Inside Terminal	Config: 13.0FR, T(0,1)
Location: Weld -3.63 m	Calibration: Automatic (1595.89 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6394'N, 144°41.1567'E
Tested: 10 Jun 2014 07:22	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=30%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-13.95	-	~		End	
S1	-13.77	-	0	60	Support	
W2	-12.85	60	0	40	Weld	
F1	-12.12	-	0	8	Y	
W3	-12.02	18	0	0	Weld	
A1	-11.47	2	0	20	Minor	Visually confirm localized external corrosion at 6H00 with max. depth is 0.08" @ 2.0 mm. UT reading adjacent to pit is 9.52 mm. Remaining wall thickness is 7.52 mm. (21.0% wall loss)
A2	-10.83	2	0	0	Minor	Visually confirm external corrosion under pipe support
S2	-10.79	-	0	0	Support	
R1	-8.48	-	0	30	False Echo	Mirror signal
W4	-3.66	60	0	60	Weld	Datum of screening
S3	-2.78	-	0	0	Support	
S4	6.12	-	0.3	8	Support	
S5	6.33	-	0.15	0	Clamp	
A3	6.49	1	0	0	Minor	Visually confirm corrosion near the pipe support at 6H00 with max. pit depth is 0.07"@ 1.8 mm. UT reading adjacent to pit is 9.54 mm. Remaining wall thickness is 7.74 mm. (18.8% wall loss)
W5	8.37	-	0	0	Weld	Datum of screening
S6	15.28	-	0.3	0	Support	
S7	15.4	-	0.15	5	Clamp	
A4	15.61	2	0	0	Medium	Visually confirm corrosion near the pipe support at 6H00 with max. pit depth is 0.11"@ 2.8 mm. UT reading adjacent to pit is 9.58 mm. Remaining wall thickness is 6.78 mm. (29.2% wall loss)



Test ID: G4-214#2190	Result: Medium Concern
Pipe: 24" RFO (S13)	Ring: R2B24(767)
Site: Inside Terminal	Config: 13.0FR, T(0,1)
Location: Weld -3.63 m	Calibration: Automatic (1595.89 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6394'N, 144°41.1567'E
Tested: 10 Jun 2014 07:22	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=30%

Feature	Location	ECL	Length	Extent	Class	Notes
W6	20.56	-	0	40	Weld	
U2	21.3	-	~		End	



Ring location



Positive direction

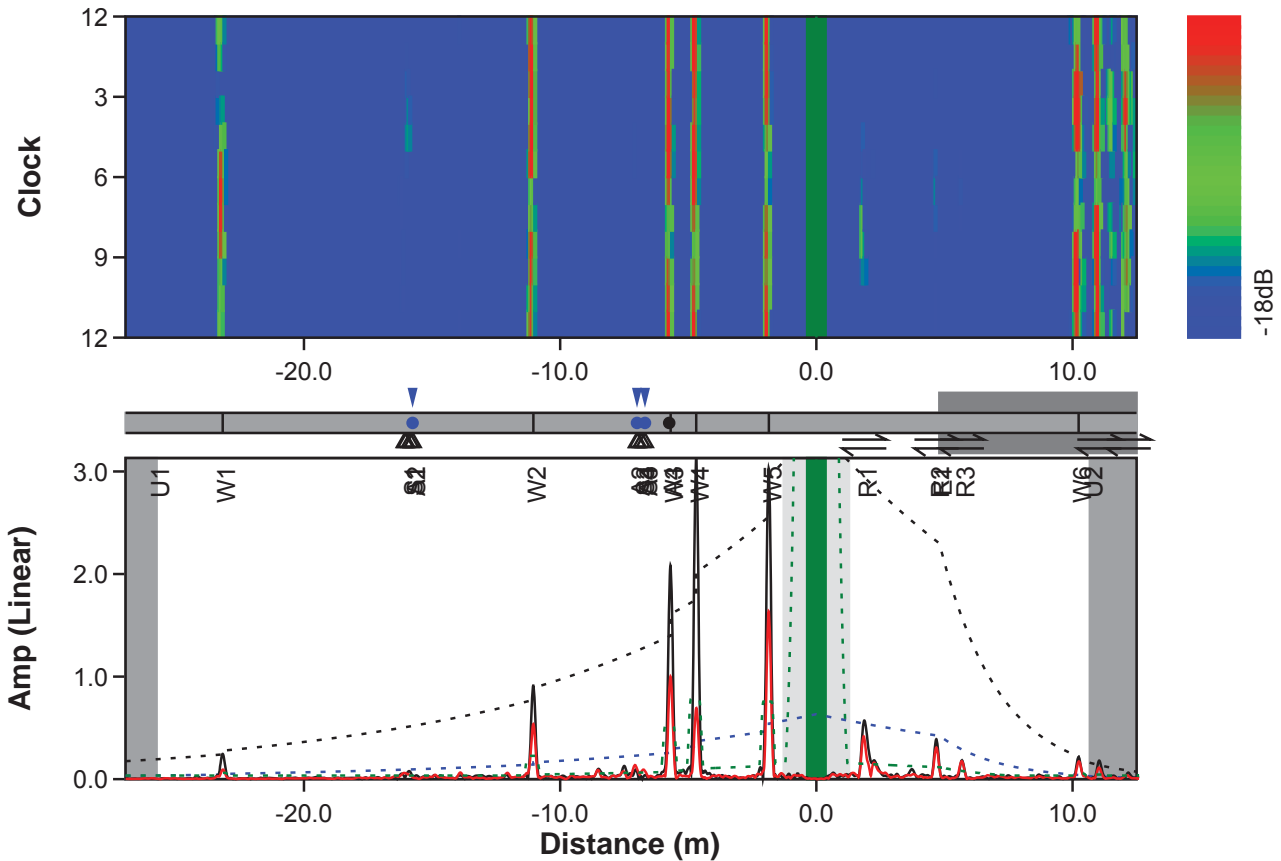


Negative direction



Test ID: G4-214#2192	Result: Medium Concern
Pipe: 24" RFO (S14)	Ring: R2B24(767)
Site: Inside Terminal	Config: 13.2FR, T(0,1)
Location: Weld -1.85m	Calibration: Automatic (2308.22 mV)
Size: 24 inch	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6482'N, 144°41.1692'E
Tested: 10 Jun 2014 08:39	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=31%

General Notes: 24" RFO-No.6 - Test Point No.: S14
 Positive direction with product flow.
 Found external localize corrosion at several location (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.59 mm), (3 o'clock:9.25 mm), (6 o'clock:9.57 mm), (9 o'clock: 9.29 mm)





Test ID: G4-214#2192	Result: Medium Concern
Pipe: 24" RFO (S14)	Ring: R2B24(767)
Site: Inside Terminal	Config: 13.2FR, T(0,1)
Location: Weld -1.85m	Calibration: Automatic (2308.22 mV)
Size: 24 inch	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6482'N, 144°41.1692'E
Tested: 10 Jun 2014 08:39	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=31%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-25.75	-	~		End	
W1	-23.17	-	0	60	Weld	
S1	-15.86	-	0.15	40	Clamp	
A1	-15.76	4	0	45	Medium	Visually confirm corrosion near the pipe support at 6H00 with max. pit depth is 0.11"@ 2.8 mm. UT reading adjacent to pit is 9.58 mm. Remaining wall thickness is 6.78 mm. (29.2% wall loss)
S2	-15.76	-	0.3	45	Support	
W2	-11.04	30	0	40	Weld	
A2	-7	2	0	0	Medium	Visually confirm corrosion near the pipe support at 4H00 and 6H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 9.43 mm. Remaining wall thickness is 6.93 mm. (26.5% wall loss)
S3	-6.82	-	0.15	0	Clamp	
S4	-6.7	-	0.3	0	Support	
A3	-6.69	1	0	0	Medium	Visually confirm corrosion near the pipe support at 7H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 9.30 mm. Remaining wall thickness is 6.80 mm (26.9% wall loss)
A4	-5.74	45	0	50	Minor	Visually confirm corrosion near the weld joint at 5H00 with max. pit depth is 0.06"@ 1.5 mm. UT reading adjacent to pit is 9.41 mm. Remaining wall thickness is 7.91 mm (15.9% wall loss)



Test ID: G4-214#2192	Result: Medium Concern
Pipe: 24" RFO (S14)	Ring: R2B24(767)
Site: Inside Terminal	Config: 13.2FR, T(0,1)
Location: Weld -1.85m	Calibration: Automatic (2308.22 mV)
Size: 24 inch	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6482'N, 144°41.1692'E
Tested: 10 Jun 2014 08:39	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=31%

Feature	Location	ECL	Length	Extent	Class	Notes
W3	-5.68	40	0	50	Weld	
W4	-4.68	45	0	80	Weld	
W5	-1.85	-	0	45	Weld	Datum of screening
R1	1.87	-	0	25	False Echo	Mirror signal
R2	4.68	-	0	20	False Echo	Mirror signal
E1	4.8	-	~	20	Earth	Pipe crossing bundwall
R3	5.67	-	0	5	False Echo	Mirror signal
W6	10.23	-	0	19	Weld	
U2	10.67	-	~		End	



Ring location



Positive direction



Negative direction



Corrosion closed to the pipe support

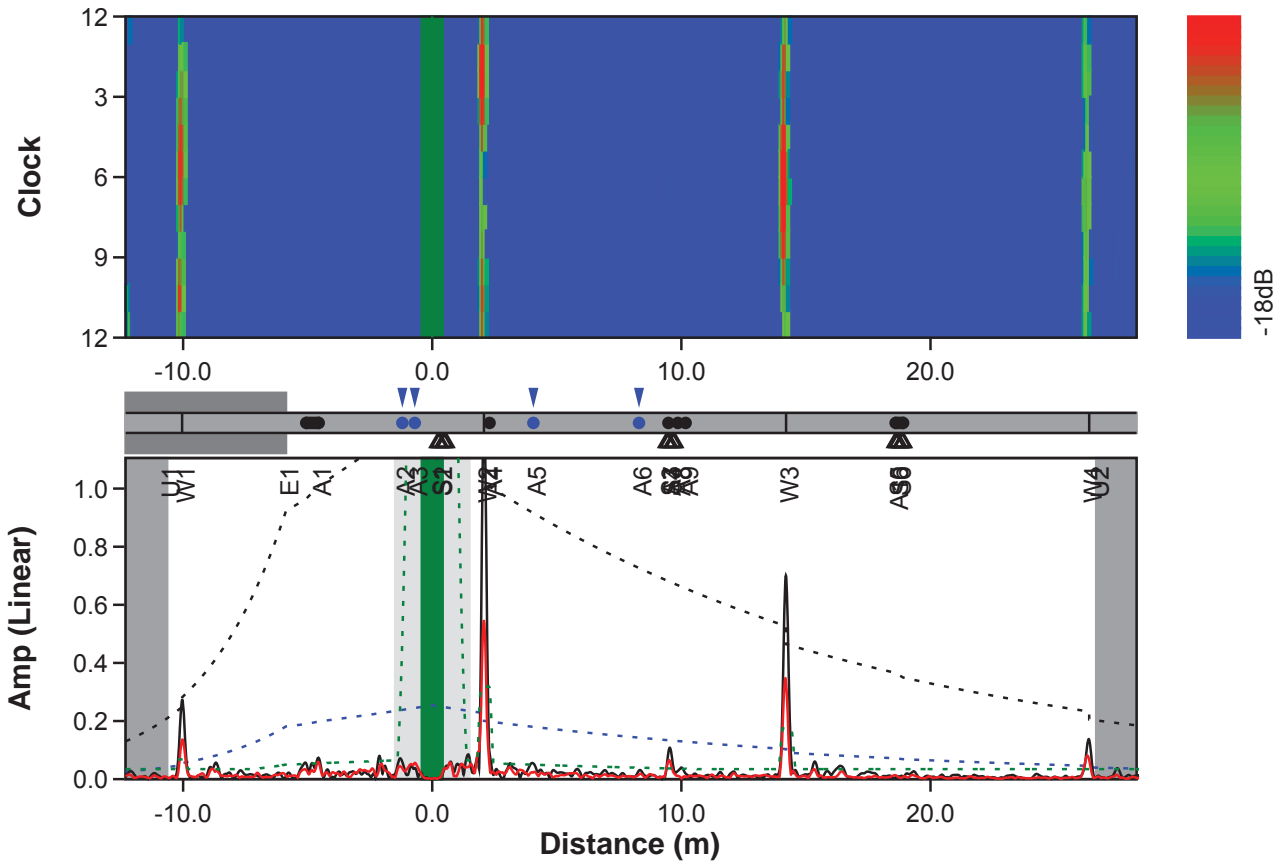


closed view of the corrosion



Test ID: G4-214#2194	Result: Medium Concern
Pipe: 24" RFO (S15)	Ring: R2B24(767)
Site: Inside Terminal	Config: 12.2FR, T(0,1)
Location: Weld +2.07m	Calibration: Automatic (1275.18 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6513'N, 144°41.1900'E
Tested: 10 Jun 2014 11:43	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=29%

General Notes: 24" RFO-No.6 - Test Point No.: S15
 Positive direction with product flow.
 Found external localize corrosion at several location (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.71 mm), (3 o'clock:9.64 mm), (6 o'clock:9.69 mm), (9 o'clock: 9.70 mm)





Test ID: G4-214#2194	Result: Medium Concern
Pipe: 24" RFO (S15)	Ring: R2B24(767)
Site: Inside Terminal	Config: 12.2FR, T(0,1)
Location: Weld +2.07m	Calibration: Automatic (1275.18 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6513'N, 144°41.1900'E
Tested: 10 Jun 2014 11:43	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=29%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-10.63	-	~		End	
W1	-10.03	30	0	50	Weld	
E1	-5.87	-	~	9	Earth	Bundwall crossing
A1	-4.55	2	0.5	19	Minor	Visually confirm general external corrosion under the wrapping section
A2	-1.2	2	0	40	Medium	Visually confirm isolated corrosion at 6H00 with max. pit depth is 0.12"@ 3.0 mm. UT reading adjacent to pit is 9.48 mm. Remaining wall thickness is 6.48 mm (31.6% wall loss)
A3	-0.7	1	0	0	Medium	Visually confirm isolated corrosion at 6H00 with max. pit depth is 0.12"@ 3.0 mm. UT reading adjacent to pit is 9.45 mm. Remaining wall thickness is 6.45 mm (31.7% wall loss)
S1	0.24	-	0.3	4	Support	
S2	0.3	-	0.15	0	Clamp	
W2	2.07	-	0	60	Weld	Datum of screening
A4	2.29	8	0	60	Minor	Visually confirm localized corrosion at 6H00 with max. pit depth is 0.05"@ 1.3 mm. UT reading adjacent to pit is 9.53 mm. Remaining wall thickness is 8.23 mm (13.6% wall loss)
A5	4.05	2	0	50	Medium	Visually confirm localized corrosion at 6H00 with max. pit depth is 0.12"@ 3.0 mm. UT reading adjacent to pit is 9.68 mm. Remaining wall thickness is 6.68 mm (31.0 % wall loss)
A6	8.3	1	0	40	Medium	Visually confirm corrosion at 6H00 with max. pit depth is 0.12"@ 3.0 mm. UT reading adjacent to pit is 9.48 mm. Remaining wall thickness is 6.48 mm (31.6% wall loss)



Test ID: G4-214#2194	Result: Medium Concern
Pipe: 24" RFO (S15)	Ring: R2B24(767)
Site: Inside Terminal	Config: 12.2FR, T(0,1)
Location: Weld +2.07m	Calibration: Automatic (1275.18 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6513'N, 144°41.1900'E
Tested: 10 Jun 2014 11:43	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=29%

Feature	Location	ECL	Length	Extent	Class	Notes
S3	9.42	-	0.3	30	Support	
A7	9.48	5	0	40	Minor	Visually confirm corrosion at 9H00 (contact point support to pipe) with max. pit depth is 0.07"@ 1.8 mm. UT reading adjacent to pit is 9.57 mm. Remaining wall thickness is 7.77 mm (18.8% wall loss)
S4	9.5	-	0.15	40	Clamp	
A8	9.85	2	0	60	Minor	Visually confirm corrosion at 6H00 with max. pit depth is 0.06"@ 1.5 mm. UT reading adjacent to pit is 9.45 mm. Remaining wall thickness is 7.95mm (15.9% wall loss)
A9	10.17	1	0	60	Minor	Visually confirm localize corrosion 6H00 with max. pit depth is 0.06"@ 1.5 mm. UT reading adjacent to pit is 9.45 mm. Remaining wall thickness is 7.95 mm (15.9% wall loss)
W3	14.2	35	0	50	Weld	
S5	18.6	-	0.3	0	Support	
A10	18.6	1	0.3	0	Minor	Visually confirm general corrosion under pipe support
S6	18.7	-	0.15	0	Clamp	
W4	26.36	-	0	40	Weld	
U2	26.65	-	~		End	



Ring location



Positive direction



Negative direction

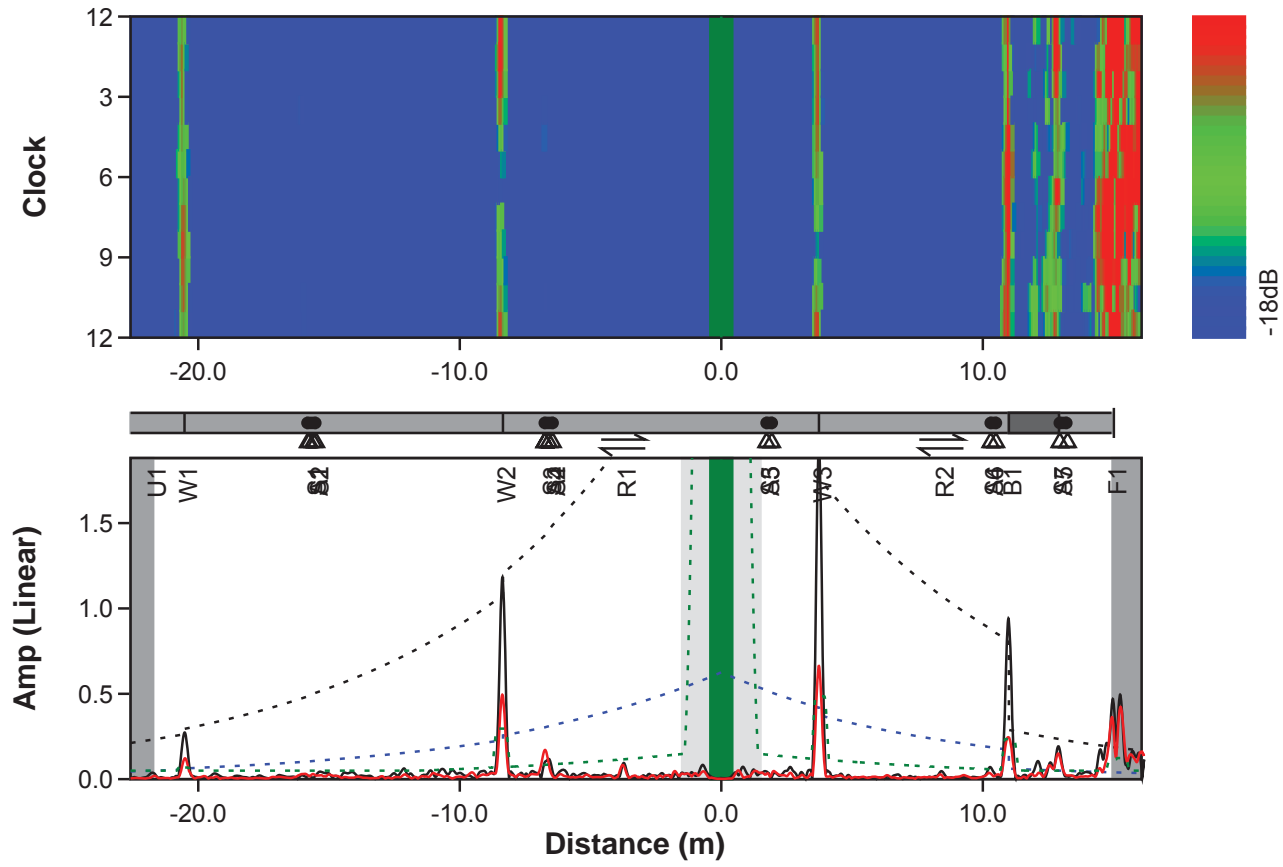


Corrosion at soil to air interface on wrapping section



Test ID: G4-214#2195	Result: Minor Concern
Pipe: 24" RFO (S16)	Ring: R2B24(767)
Site: Inside Terminal	Config: 11.2FR, T(0,1)
Location: Weld +3.73m	Calibration: Automatic (1720.33 mV)
Size: 24 inch (9.55mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6690'N, 144°41.2011'E
Tested: 11 Jun 2014 07:42	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=27%

General Notes: 24" RFO no. 6 - Test Point No.: S16
 Positive direction with product flow.
 Found general external corrosion under pipe support (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.71 mm), (3 o'clock:9.69 mm),
 (6 o'clock:9.38 mm), (9 o'clock: 9.51 mm)





Test ID: G4-214#2195	Result: Minor Concern
Pipe: 24" RFO (S16)	Ring: R2B24(767)
Site: Inside Terminal	Config: 11.2FR, T(0,1)
Location: Weld +3.73m	Calibration: Automatic (1720.33 mV)
Size: 24 inch (9.55mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6690'N, 144°41.2011'E
Tested: 11 Jun 2014 07:42	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=27%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-21.72	-	~		End	
W1	-20.52	-	0	60	Weld	
S1	-15.6	-	0.15	0	Clamp	
A1	-15.52	2	0.3	6	Minor	Visually confirm general external corrosion under pipe support
S2	-15.5	-	0.3	25	Support	
W2	-8.34	25	0	60	Weld	
S3	-6.6	-	0.15	0	Clamp	
S4	-6.45	-	0.3	60	Support	
A2	-6.45	2	0.3	60	Minor	Visually confirm general external corrosion under pipe support
R1	-3.74	-	0	12	False Echo	Mirror signal
S5	1.73	-	0.2	25	Support	
A3	1.73	1	0.2	25	Minor	Visually confirm general external corrosion under pipe support
W3	3.73	-	0	70	Weld	Datum of screening
R2	8.41	-	0	40	False Echo	Mirror signal
S6	10.3	-	0.2	50	Support	
A4	10.3	2	0.2	50	Minor	Visually confirm general external corrosion under pipe support
B1	10.99	-	0	70	1D Bend	
S7	12.94	-	0.3	20	Support	
A5	12.94	20	0.25	20	Minor	Visually confirm general external corrosion under pipe support
F1	15.01	-	0	25	Flange	



Ring location



Positive direction



Negative direction

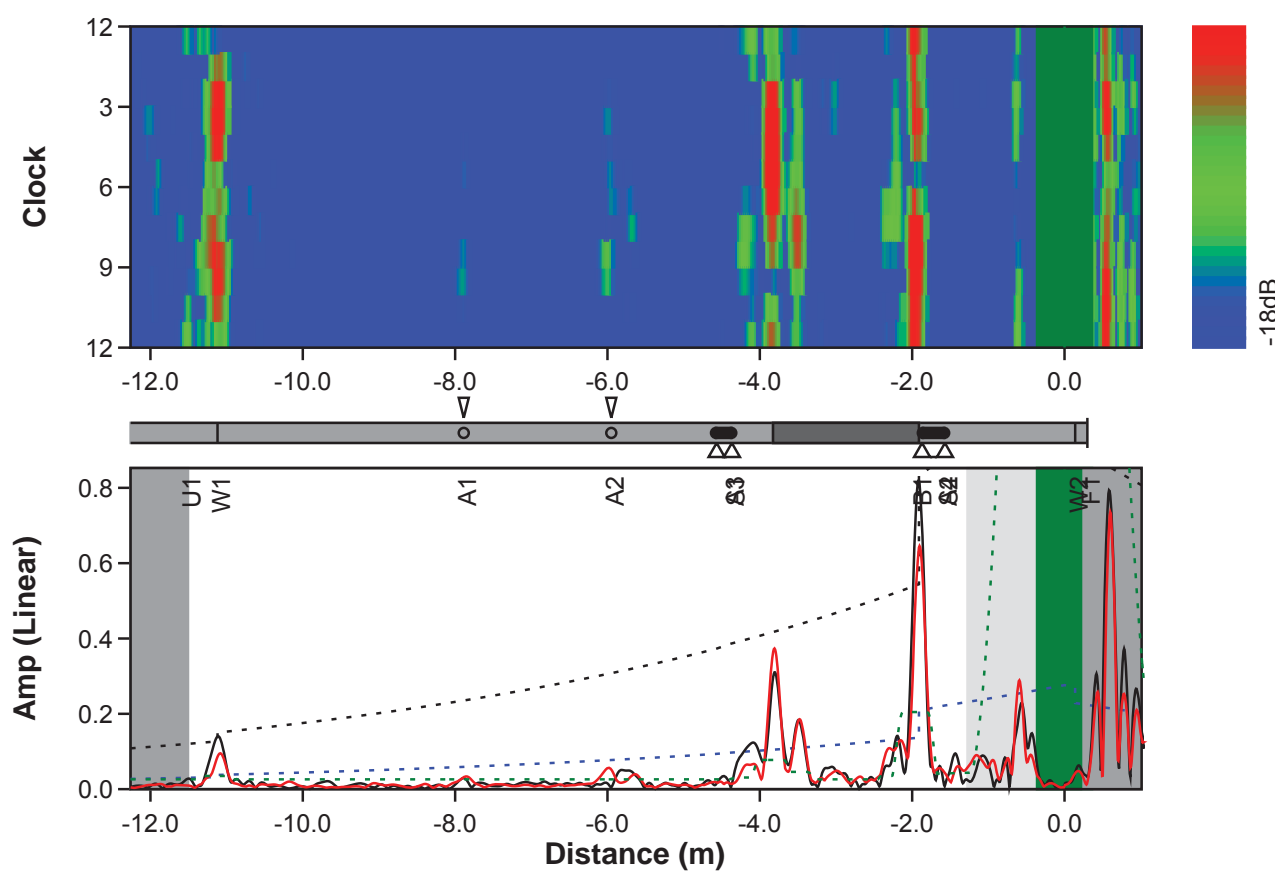


Corrosion under pipe support



Test ID: G4-214#2196	Result: Minor Concern
Pipe: 24" RFO (S17)	Ring: R2B24(767)
Site: Inside Terminal	Config: 14.8FR, T(0,1)
Location: Weld +0.14m	Calibration: Automatic (1795.87 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6733'N, 144°41.2040'E
Tested: 11 Jun 2014 11:22	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=9%, Weld=33%

General Notes: 24" RFO-No.6 - Test Point No.: S17
Positive direction with product flow.
Found general external corrosion under pipe support (refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.65 mm), (3 o'clock:9.62 mm), (6 o'clock:9.52 mm), (9 o'clock: 9.32 mm)





Test ID: G4-214#2196	Result: Minor Concern
Pipe: 24" RFO (S17)	Ring: R2B24(767)
Site: Inside Terminal	Config: 14.8FR, T(0,1)
Location: Weld +0.14m	Calibration: Automatic (1795.87 mV)
Size: 24 inch (9.525mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6733'N, 144°41.2040'E
Tested: 11 Jun 2014 11:22	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=9%, Weld=33%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-11.5	-	~		End	
W1	-11.11	-	0	30	Weld	
A1	-7.88	4	0	0	Anomaly	UT confirm no significant finding. Minimum remaining wall thickness is 9.41 mm.
A2	-5.95	3	0	0	Anomaly	UT confirm no significant finding. Minimum remaining wall thickness is 9.35 mm.
A3	-4.37	5	0.2	70	Minor	Visually confirm general external corrosion under pipe support
S1	-4.36	-	0.2	70	Support	
B1	-1.91	-	0	20	1D Bend	
A4	-1.58	2	0.28	8	Minor	Visually confirm general external corrosion under pipe support
S2	-1.57	-	0.3	8	Support	
W2	0.14	-	0	25	Weld	Datum of screening
F1	0.3	-	0	25	Flange	



Ring location



General view of external corrosion



Negative direction

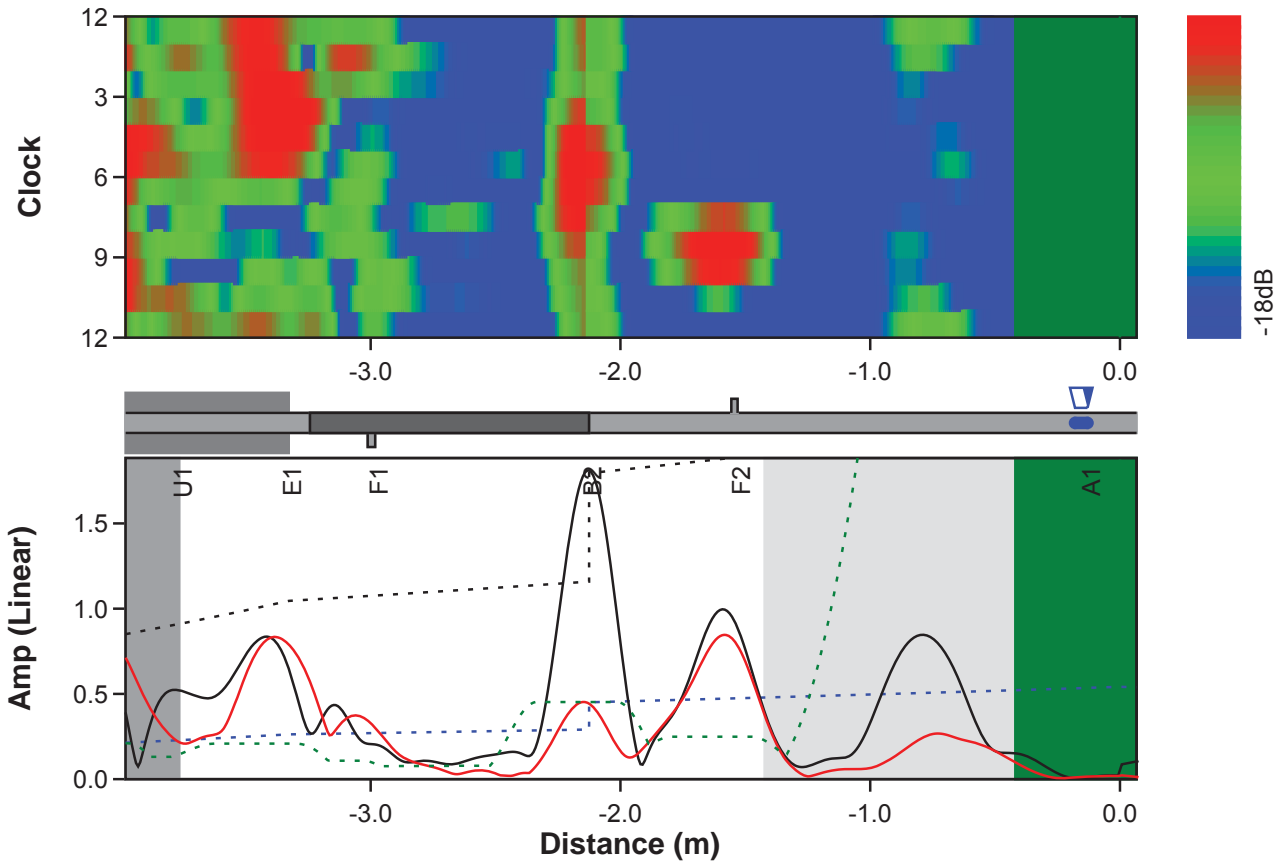


corrosion under pipe support

3.2 14", 12" AND 16" RESIDUAL FUEL OIL (RFO)

Test ID: G4-214#2198	Result: Medium Concern
Pipe: 14" RFO (S1)	Ring: R2B14(1525)
Site: Inside Terminal	Config: 6.8FR, T(0,1)
Location: Flange +0.14m	Calibration: Automatic (1647.58 mV)
Size: 14 inch (11.125mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6096'N, 144°41.0891'E
Tested: 12 Jun 2014 07:28	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 14" RFO-No.6 (bypass line) - Test Point No.: S1
 Positive direction with product flow.
 Found external localize corrosion at 6H00 (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:11.09 mm), (3 o'clock:11.85 mm), (6 o'clock:10.58 mm), (9 o'clock:11.32 mm)





Test ID: G4-214#2198	Result: Medium Concern
Pipe: 14" RFO (S1)	Ring: R2B14(1525)
Site: Inside Terminal	Config: 6.8FR, T(0,1)
Location: Flange +0.14m	Calibration: Automatic (1647.58 mV)
Size: 14 inch (11.125mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6096'N, 144°41.0891'E
Tested: 12 Jun 2014 07:28	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-3.76	-	~		End	
E1	-3.32	-	~	0	Earth	Underground
F1	-2.98	-	0	0	Drain	
B2	-2.12	-	0	80	1D Bend	
F2	-1.53	-	0	15	Vent	
A1	-0.13	0	0.05	9	Medium	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 10.58 mm. Remaining wall thickness is 8.03 mm (23.6% wall loss)
F3	0.23	-	0	80	Flange	Datum of screening



Ring location



General view of pipeline



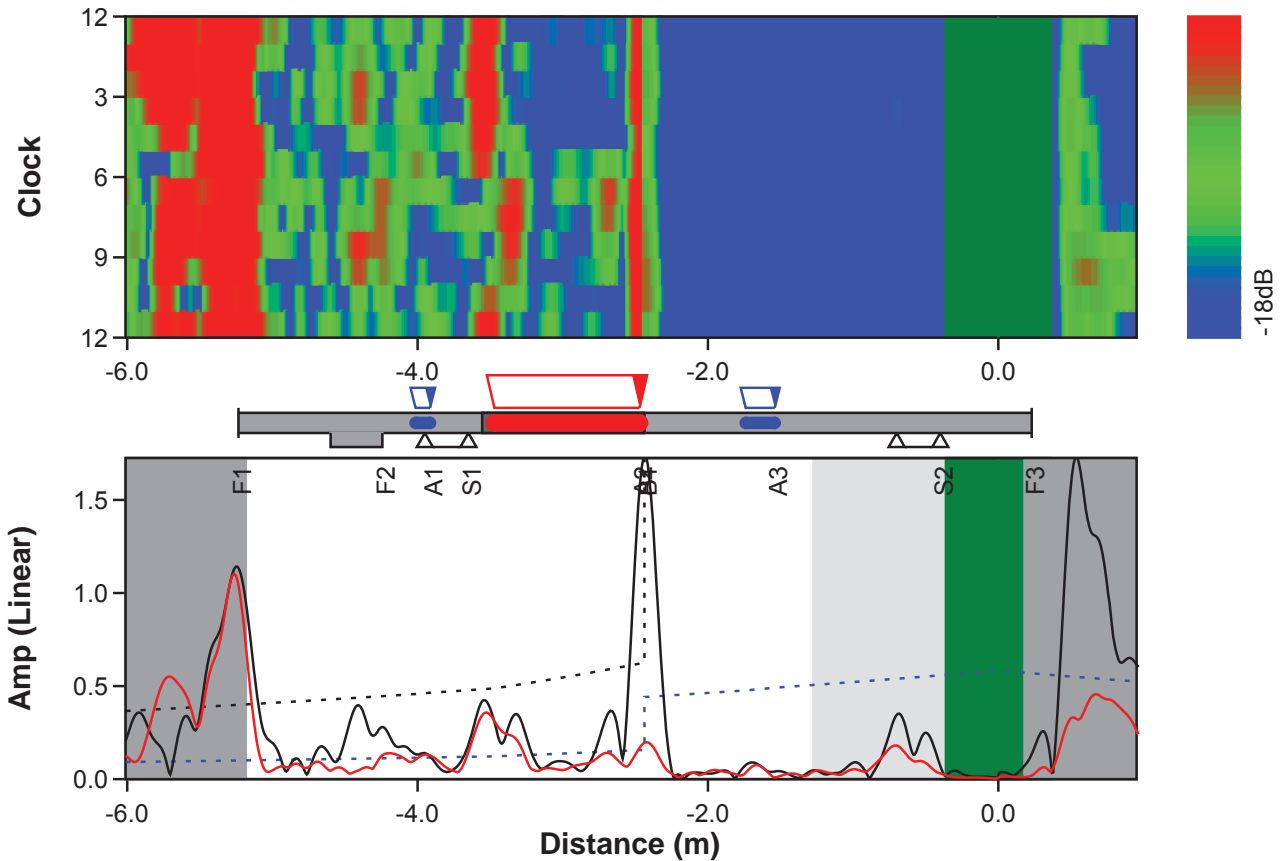
Negative direction



General view of pipeline

Test ID: G4-214#2199	Result: Major Concern
Pipe: 14" RFO (S2)	Ring: R2B14(1525)
Site: Inside Terminal	Config: 9.0FR, T(0,1)
Location: Flange +0.23m	Calibration: Automatic (1446.68 mV)
Size: 14 inch	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6052'N, 144°41.0914'E
Tested: 12 Jun 2014 08:28	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 14" RFO-No.6 (bypass line)- Test Point No.: S2
 Positive direction with product flow.
 Found external localize corrosion at several location (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:11.28 mm), (3 o'clock:11.39 mm), (6 o'clock:11.40 mm), (9 o'clock: 11.23 mm)





Test ID: G4-214#2199	Result: Major Concern
Pipe: 14" RFO (S2)	Ring: R2B14(1525)
Site: Inside Terminal	Config: 9.0FR, T(0,1)
Location: Flange +0.23m	Calibration: Automatic (1446.68 mV)
Size: 14 inch	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6052'N, 144°41.0914'E
Tested: 12 Jun 2014 08:28	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
F1	-5.23	-	0	4	Flange	
F2	-4.24	-	0	50	Y	
A1	-3.91	7	0.1	6	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.13"@ 3.3 mm. UT reading adjacent to pit is 11.58 mm. Remaining wall thickness is 8.28 mm (28.5% wall loss)
S1	-3.65	-	0.3	19	Support	
A2	-2.47	60	1	90	Severe	Visually confirm external corrosion at the bend (6H00 position) with max. pit depth is 0.27"@ 6.8 mm. UT reading adjacent to pit is 10.76 mm. Remaining wall thickness is 3.84 mm (63.2% wall loss)
B1	-2.43	-	0	90	1D Bend	
A3	-1.54	1	0.2	5	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.13"@ 3.3 mm. UT reading adjacent to pit is 11.58 mm. Remaining wall thickness is 8.28 mm (28.5% wall loss)
S2	-0.4	-	0.3	70	Support	
F3	0.23	-	0	80	Flange	Datum of screening



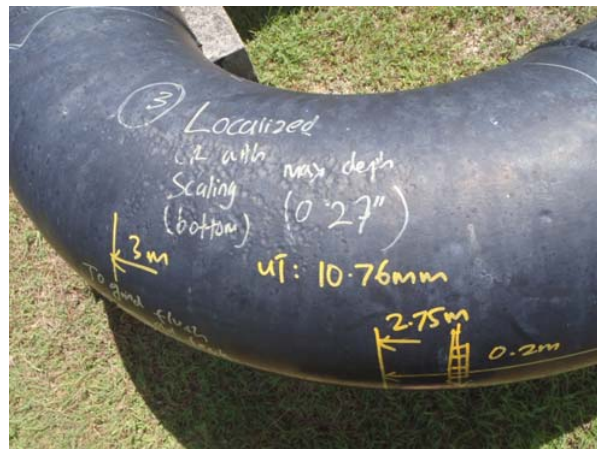
Ring location



General view of pipeline



Negative direction



Severe level corrosion at 6H00

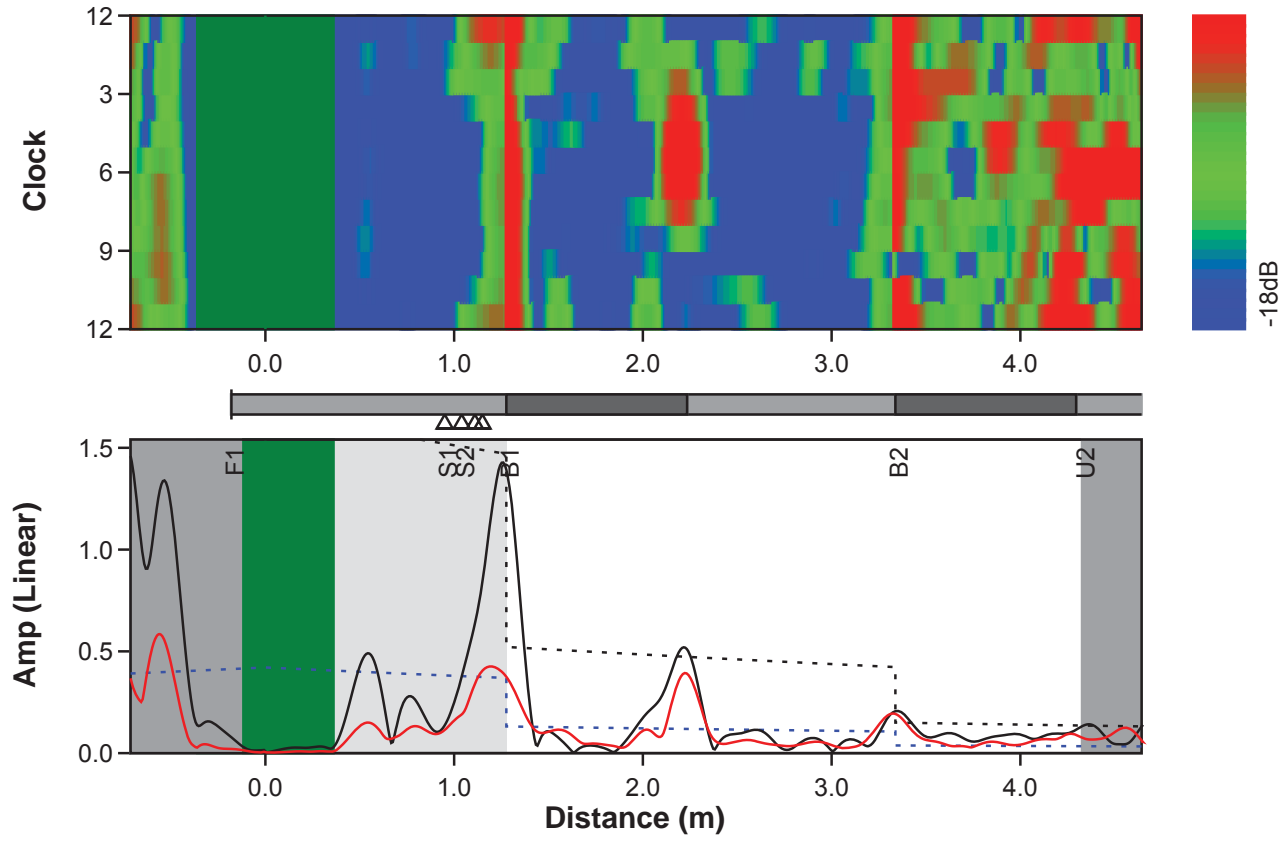


View of external corrosion with max. depth is 0.27" @ 6.8 mm



Test ID: G4-214#2205	Result: OK
Pipe: 12" RFO (S3A)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 7.6FR, T(0,1)
Location: Flange -0.18m	Calibration: Automatic (1024.73 mV)
Size: 12 inch	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6069'N, 144°41.0924'E
Tested: 13 Jun 2014 07:44	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 12" RFO-No.6 (bypass line) - Test Point No.: S3A
 Positive direction with product flow.
 No corrosion above the reporting level observed in the tested section of the pipe and found satisfactory.
 (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.51 mm), (3 o'clock:9.80 mm), (6 o'clock:9.52 mm), (9 o'clock: 9.65 mm)





Test ID: G4-214#2205	Result: OK
Pipe: 12" RFO (S3A)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 7.6FR, T(0,1)
Location: Flange -0.18m	Calibration: Automatic (1024.73 mV)
Size: 12 inch	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6069'N, 144°41.0924'E
Tested: 13 Jun 2014 07:44	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
F1	-0.18	-	0	80	Flange	Datum of screening
S1	0.95	-	0.2	35	Support	
S2	1.04	-	0.07	45	Clamp	
B1	1.27	-	0	70	Bend	
B2	3.33	-	0	6	1D Bend	
U2	4.32	-	~		End	



Ring location



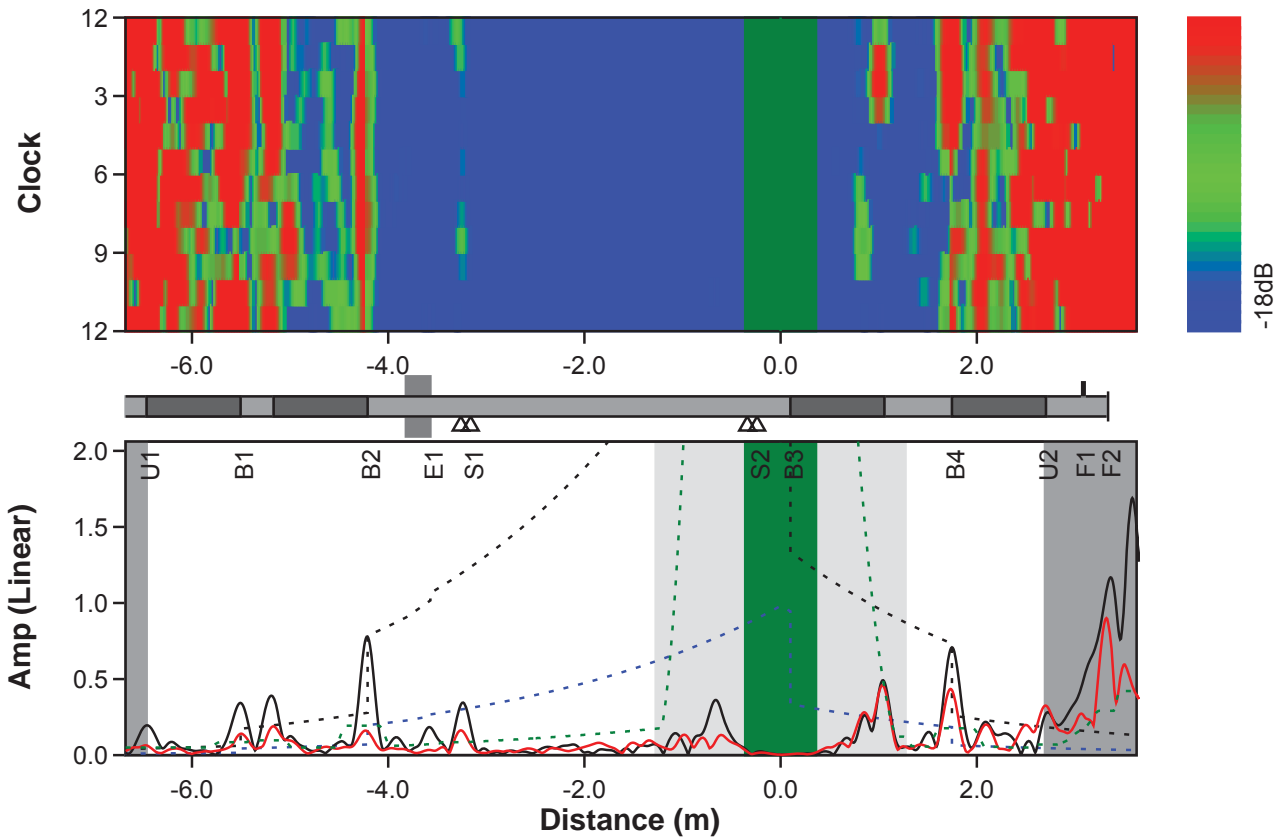
General view of positive direction



General view of negative direction

Test ID: G4-214#2206	Result: OK
Pipe: 12" RFO (S4A)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 8.4FR, T(0,1)
Location: Weld bend +0.10m	Calibration: Automatic (1706.49 mV)
Size: 12 inch	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6078'N, 144°41.0934'E
Tested: 13 Jun 2014 08:27	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 12" RFO-No.6 (bypass line) - Test Point No.: S4A
 Positive direction with product flow.
 No corrosion above the reporting level observed in the tested section of the pipe and found satisfactory.
 (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.64 mm), (3 o'clock:9.32 mm), (6 o'clock:9.58 mm), (9 o'clock: 9.66 mm)





Test ID: G4-214#2206	Result: OK
Pipe: 12" RFO (S4A)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 8.4FR, T(0,1)
Location: Weld bend +0.10m	Calibration: Automatic (1706.49 mV)
Size: 12 inch	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6078'N, 144°41.0934'E
Tested: 13 Jun 2014 08:27	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-6.46	-	~		End	
B1	-5.5	-	0	60	1D Bend	
B2	-4.21	-	0	80	1D Bend	
E1	-3.57	-	0.25	80	Wall	Building wall
S1	-3.16	-	0.1	60	Clamp	
S2	-0.24	-	0.1	35	Clamp	
B3	0.1	-	0	0	1D Bend	Datum of screening
B4	1.74	-	0	40	1D Bend	
U2	2.69	-	~		End	
F1	3.07	-	0	50	Vent	Gauge meter
F2	3.33	-	0	25	Flange	



Ring location



General view of positive direction

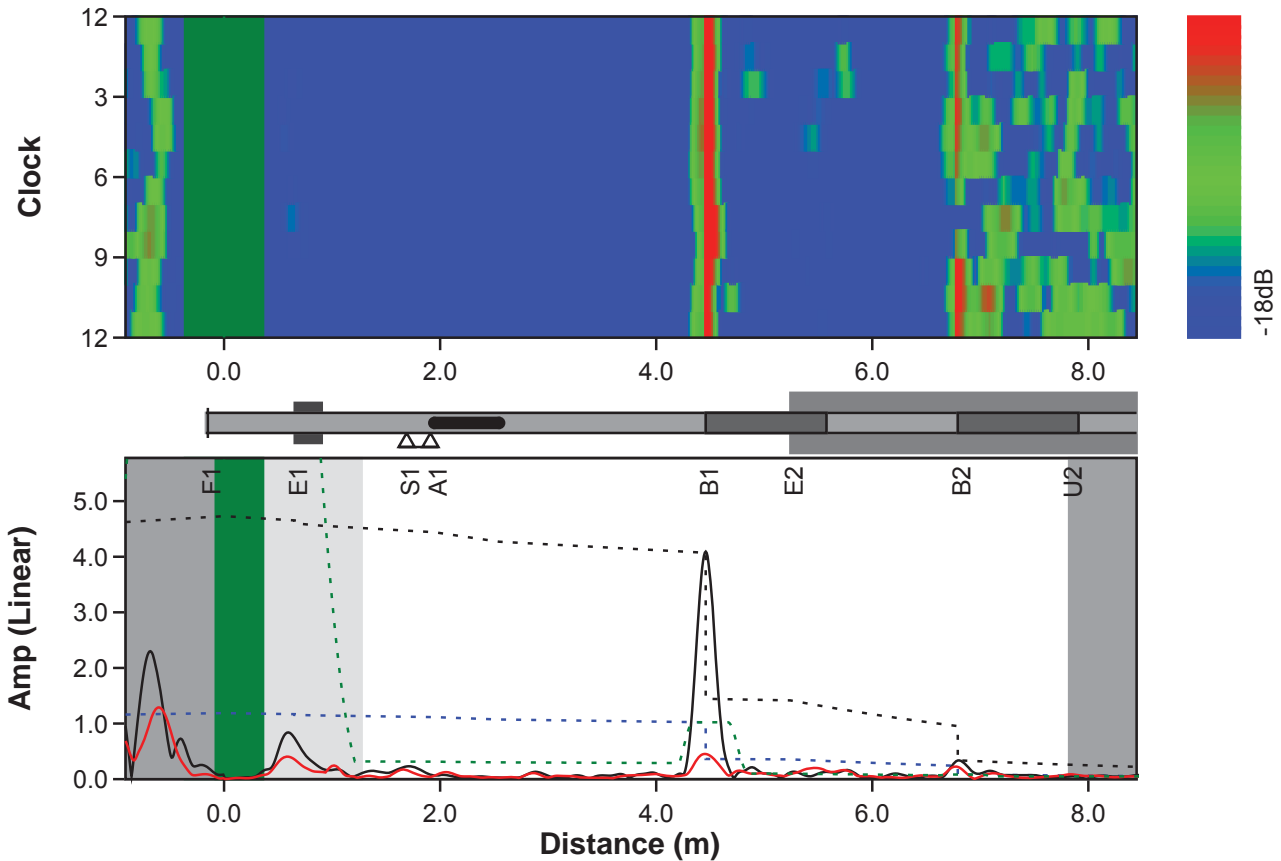


Negative direction



Test ID: G4-214#2201	Result: Minor Concern
Pipe: 16" RFO (S5)	Ring: R2B14(1525)
Site: Inside Terminal	Config: 8.8FR, T(0,1)
Location: Flange -0.23m	Calibration: Automatic (2541.99 mV)
Size: 14 inch (6.35mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6103'N, 144°41.0988'E
Tested: 12 Jun 2014 09:22	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 16" RFO-No.6 (bypass line) - Test Point No.: S5
Positive direction with product flow.
Found external corrosion at 6H00 closed to the pipe support. (refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:6.59 mm), (3 o'clock:6.68 mm), (6 o'clock:6.88 mm), (9 o'clock: 6.65 mm)





Test ID: G4-214#2201	Result: Minor Concern
Pipe: 16" RFO (S5)	Ring: R2B14(1525)
Site: Inside Terminal	Config: 8.8FR, T(0,1)
Location: Flange -0.23m	Calibration: Automatic (2541.99 mV)
Size: 14 inch (6.35mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6103'N, 144°41.0988'E
Tested: 12 Jun 2014 09:22	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
F1	-0.15	-	0	60	Flange	Datum of screening
E1	0.65	-	0.25	50	Wall	Building wall
S1	1.69	-	0.22	0	Support	
A1	1.94	1	0.6	0	Minor	Visually confirm external corrosion closed to support at 6H00 with max. pit depth is 0.06" @ 1.5 mm. UT reading adjacent to pit is 6.54 mm. Remaining wall thickness is 5.04 mm (22.9% wall loss)
B1	4.45	-	0	90	1D Bend	
E2	5.24	-	~	12	Earth	Underground
B2	6.79	-	0	35	1D Bend	
U2	7.82	-	~		End	



Ring location



General view of pipeline

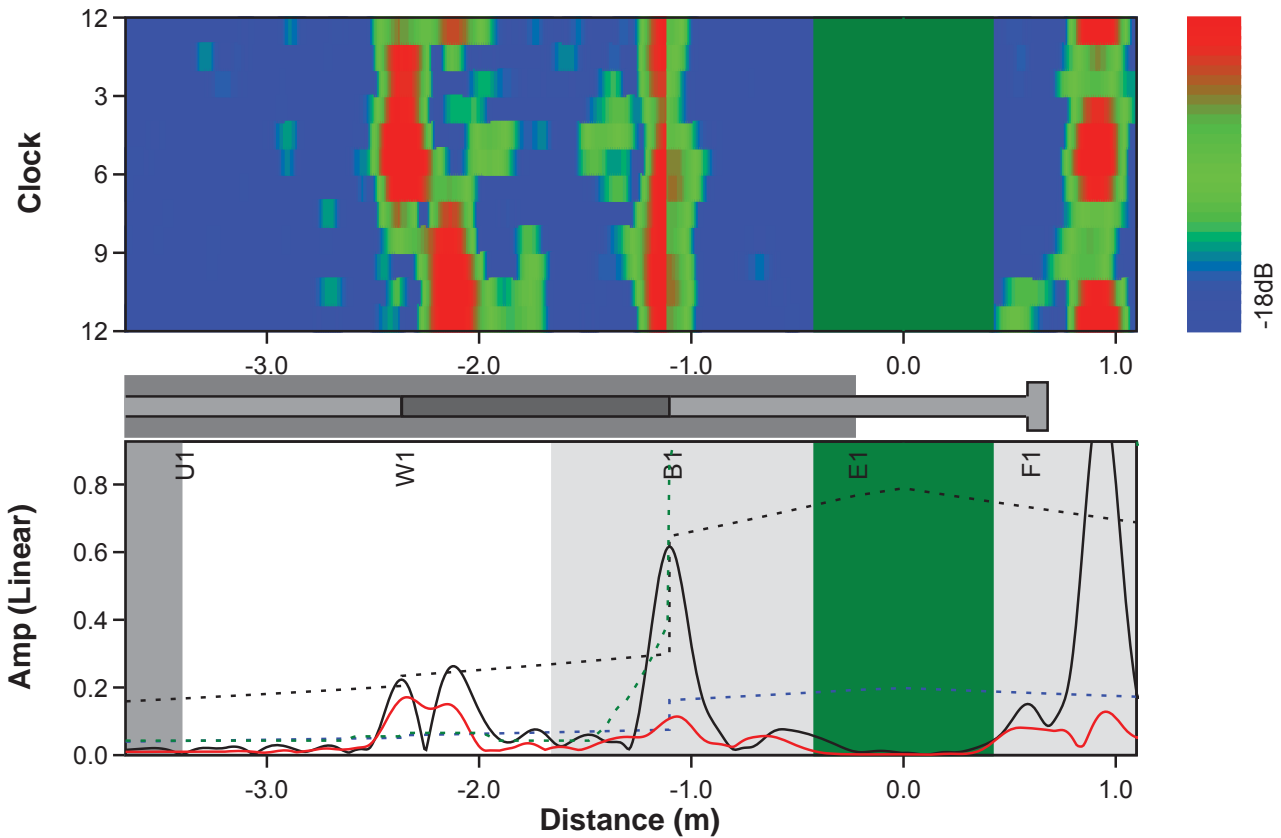


General view of pipeline



Test ID: G4-214#2202	Result: OK
Pipe: 16" RFO (S6)	Ring: R2B14(1525)
Site: Inside Terminal	Config: 8.2FR, T(0,1)
Location: Branch +0.58m	Calibration: Automatic (672.436 mV)
Size: 14 inch (12.7mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6158'N, 144°41.1133'E
Tested: 12 Jun 2014 11:50	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 16" RFO-No.6 (bypass line) - Test Point No.: S6
Positive direction with product flow.
No corrosion above the reporting level observed in the tested section of the pipe and found satisfactory.
(refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:12.32 mm), (3 o'clock:12.59 mm), (6 o'clock:12.32 mm), (9 o'clock:12.59 mm)





Test ID: G4-214#2202	Result: OK
Pipe: 16" RFO (S6)	Ring: R2B14(1525)
Site: Inside Terminal	Config: 8.2FR, T(0,1)
Location: Branch +0.58m	Calibration: Automatic (672.436 mV)
Size: 14 inch (12.7mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6158'N, 144°41.1133'E
Tested: 12 Jun 2014 11:50	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-3.4	-	~		End	
W1	-2.36	-	0	25	Weld	
B1	-1.1	-	1.26	80	Bend	
E1	-0.23	-	~	90	Earth	Underground
F1	0.58	-	0	45	T	Datum of screening



Ring location



General view of pipeline

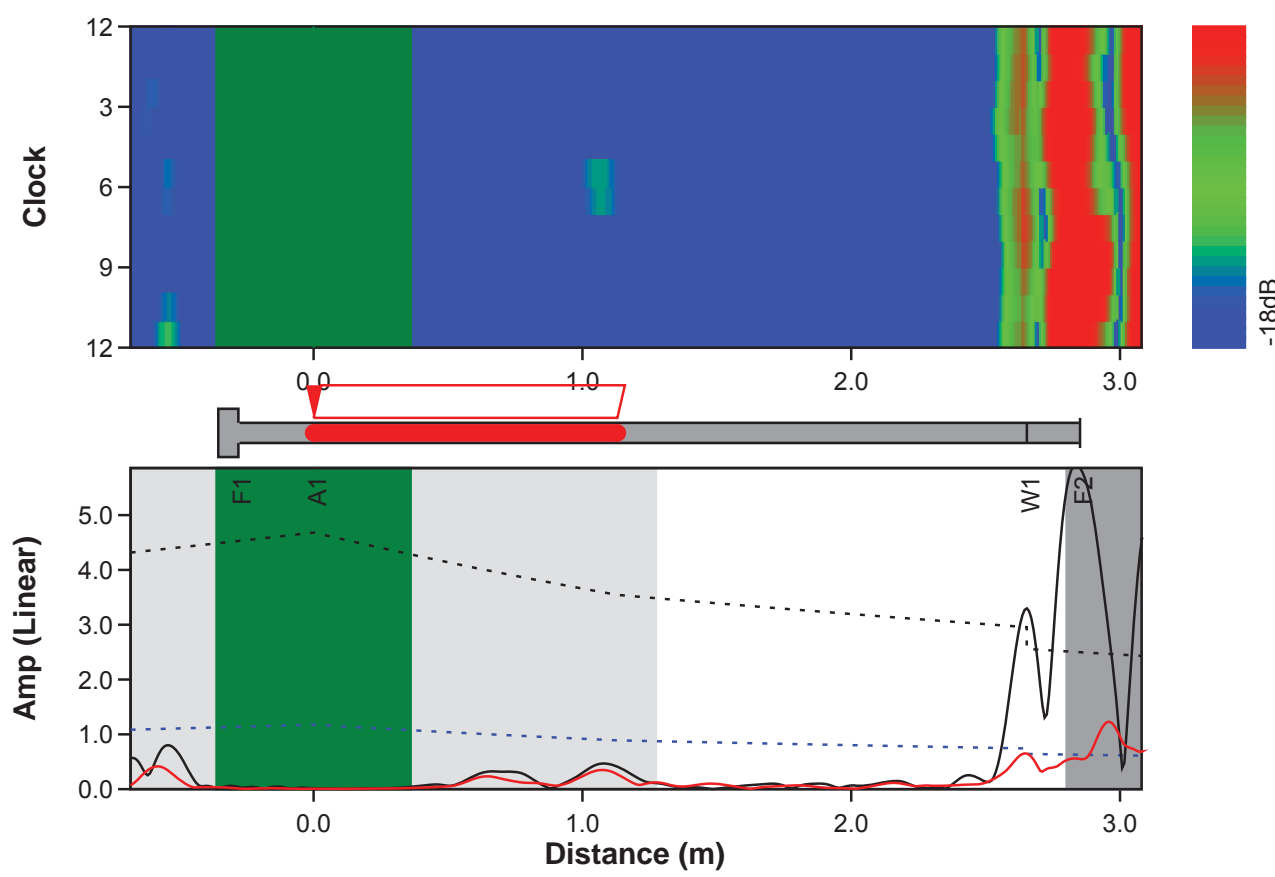


General view

3.3 12"RESIDUAL FUEL OIL (RFO)

Test ID: G4-214#2204	Result: Major Concern
Pipe: 12" RFO (S1)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 7.4FR, T(0,1)
Location: Branch end -0.48m	Calibration: Automatic (1478.11 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6095'N, 144°41.0892'E
Tested: 13 Jun 2014 07:15	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 14" RFO-No.6 - Test Point No.: S1
 Positive direction with product flow.
 Found external corrosion at 6H00 position (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.63 mm), (3 o'clock:9.22 mm), (6 o'clock:10.20 mm), (9 o'clock:10.15 mm)





Test ID: G4-214#2204	Result: Major Concern
Pipe: 12" RFO (S1)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 7.4FR, T(0,1)
Location: Branch end -0.48m	Calibration: Automatic (1478.11 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6095'N, 144°41.0892'E
Tested: 13 Jun 2014 07:15	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
F1	-0.28	-	0	60	T	Datum of screening
A1	0	0	1.13	35	Severe	Visually confirm external corrosion at 6H00 with max. pit depth is 0.21"@ 5.3 mm. UT reading adjacent to pit is 9.80 mm. Remaining wall thickness is 4.50 mm (54.1% wall loss)
W1	2.65	-	0	80	Weld	
F2	2.85	-	0	90	Flange	



Ring location



Positive direction



General view of negative section



External corrosion at 6H00 with max. pit depth is 0.21" @ 5.3 mm.

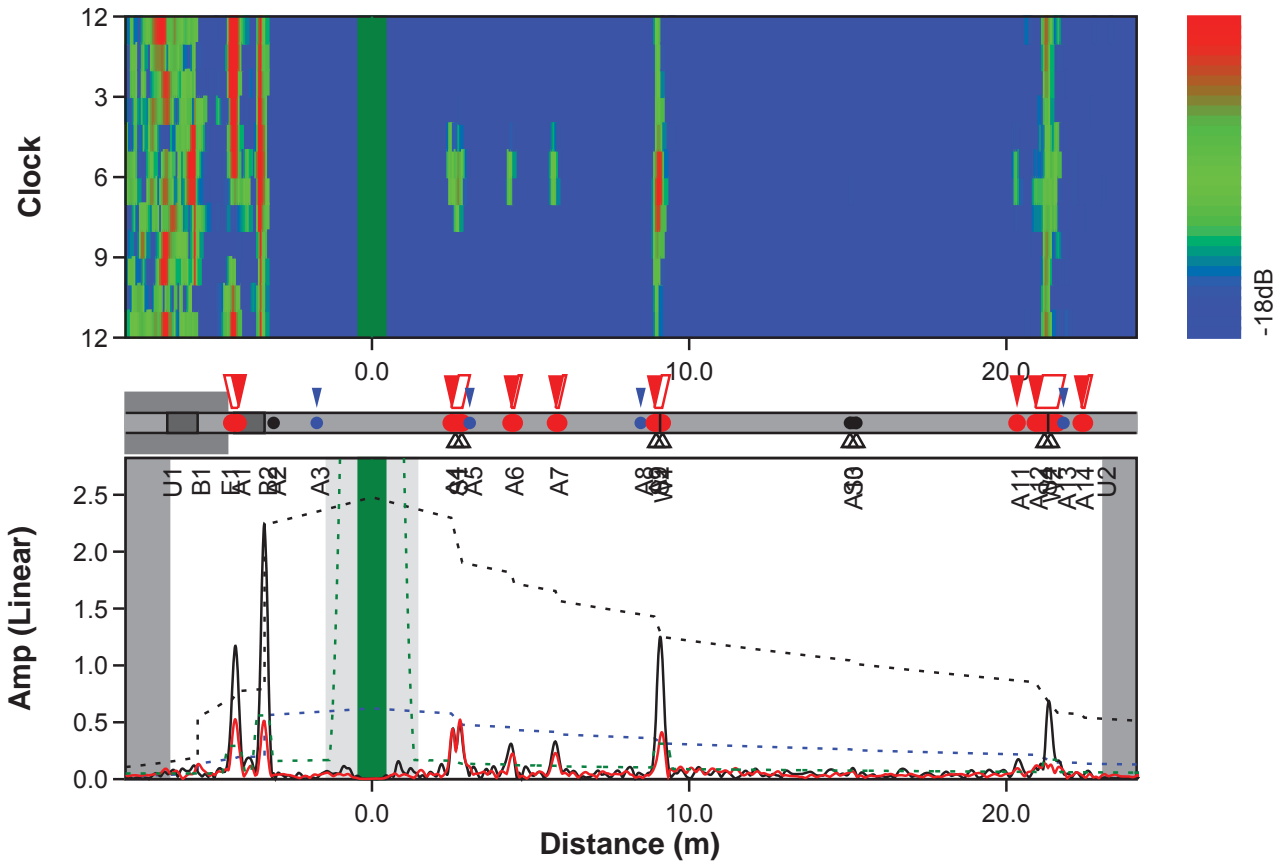


Closed view of corrosion



Test ID: G4-214#2207	Result: Major Concern
Pipe: 12" RFO (S2)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 5.6FR, T(0,1)
Location: Weld bend -3.38 m	Calibration: Automatic (1000.74 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6202'N, 144°41.1136'E
Tested: 13 Jun 2014 12:07	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 14" RFO-No.6 - Test Point No.: S2
 Positive direction with product flow.
 Found external corrosion mostly concentrate at bottom side (refer class, note and location as table below).
 Location of signals measuring from center of ring.
 Thickness at ring position are (12 o'clock:9.67 mm), (3 o'clock:9.57 mm), (6 o'clock:9.83 mm), (9 o'clock:9.88 mm)





Test ID: G4-214#2207	Result: Major Concern
Pipe: 12" RFO (S2)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 5.6FR, T(0,1)
Location: Weld bend -3.38 m	Calibration: Automatic (1000.74 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6202'N, 144°41.1136'E
Tested: 13 Jun 2014 12:07	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-6.39	-	~		End	
B1	-5.49	-	0	0	1D Bend	
E1	-4.56	-	~	60	Earth	Underground
A1	-4.22	18	0.2	60	Severe	Visually confirm external corrosion at soil to air section with max. pit depth is 0.2"@ 5.0 mm. UT reading adjacent to pit is 9.95 mm. Remaining wall thickness is 4.95 mm (50.2% wall loss)
B2	-3.38	-	0	80	1D Bend	Datum of screening
A2	-3.1	1	0	25	Minor	Visually confirm external corrosion at 6H00 with max. pit depth is 0.06"@ 1.5 mm. UT reading adjacent to pit is 9.76 mm. Remaining wall thickness is 8.26 mm (15.3% wall loss)
A3	-1.74	0	0	0	Medium	Visually confirm external corrosion at 3-4H00 with max. pit depth is 0.12"@ 3.0 mm. UT reading adjacent to pit is 9.45 mm. Remaining wall thickness is 6.45 mm (31.7% wall loss)
A4	2.5	5	0.35	1	Severe	Visually confirm external corrosion at 6H00 with max. pit depth is 0.24"@ 6.0 mm. UT reading adjacent to pit is 9.70 mm. Remaining wall thickness is 3.70 mm (61.8% wall loss)
S1	2.63	-	0.2	5	Support	
A5	3.08	1	0	0	Medium	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.13"@ 3.3 mm. UT reading adjacent to pit is 9.73 mm. Remaining wall thickness is 6.43 mm (33.9% wall loss)
A6	4.38	4	0.1	30	Severe	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.20"@ 5.0 mm. UT reading adjacent to pit is 9.95 mm. Remaining wall thickness is 4.95 mm (50.2% wall loss)



Test ID: G4-214#2207	Result: Major Concern
Pipe: 12" RFO (S2)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 5.6FR, T(0,1)
Location: Weld bend -3.38 m	Calibration: Automatic (1000.74 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6202'N, 144°41.1136'E
Tested: 13 Jun 2014 12:07	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
A7	5.78	5	0.1	30	Severe	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.20"@ 5.0 mm. UT reading adjacent to pit is 9.96 mm. Remaining wall thickness is 4.96 mm (50.0% wall loss)
A8	8.47	1	0	60	Medium	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 10.15 mm. Remaining wall thickness is 7.65 mm (24.6% wall loss)
A9	8.9	10	0.25	70	Severe	Visually confirm external corrosion under pipe support at 6H00 with max. pit depth is 0.25"@ 6.3 mm. UT reading adjacent to pit is 10.03 mm. Remaining wall thickness is 3.68 mm (62.8% wall loss)
S2	8.96	-	0.2	80	Support	
W1	9.08	20	0	70	Weld	
S3	15.07	-	0.2	25	Support	
A10	15.07	2	0.2	25	Minor	Visually confirm external corrosion under pipe support (6H00) with max. pit depth is 0.06"@ 1.5 mm. UT reading adjacent to pit is 9.42 mm. Remaining wall thickness is 7.92 mm (15.9% wall loss)
A11	20.33	5	0	45	Severe	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.18"@ 4.5 mm. UT reading adjacent to pit is 9.18 mm. Remaining wall thickness is 4.68 mm (49.0% wall loss)
A12	20.91	3	0.7	0	Severe	Visually confirm external corrosion under pipe support (6H00) with max. pit depth is 0.22"@ 5.5 mm. UT reading adjacent to pit is 9.82 mm. Remaining wall thickness is 4.32 mm (56.0% wall loss)



Test ID: G4-214#2207	Result: Major Concern
Pipe: 12" RFO (S2)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 5.6FR, T(0,1)
Location: Weld bend -3.38 m	Calibration: Automatic (1000.74 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6202'N, 144°41.1136'E
Tested: 13 Jun 2014 12:07	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
S4	21.2	-	0.2	70	Support	
W2	21.31	25	0	80	Weld	
A13	21.8	4	0	11	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.13"@ 3.3 mm. UT reading adjacent to pit is 9.93 mm. Remaining wall thickness is 6.63 mm (33.2% wall loss)
A14	22.36	2	0.1	0	Severe	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.18"@ 4.5 mm. UT reading adjacent to pit is 9.57 mm. Remaining wall thickness is 5.07 mm (47.0% wall loss)
U2	23.05	-	~		End	



Ring location



Positive direction



Negative direction



Corrosion at soil to air interface



Corrosion under pipe support

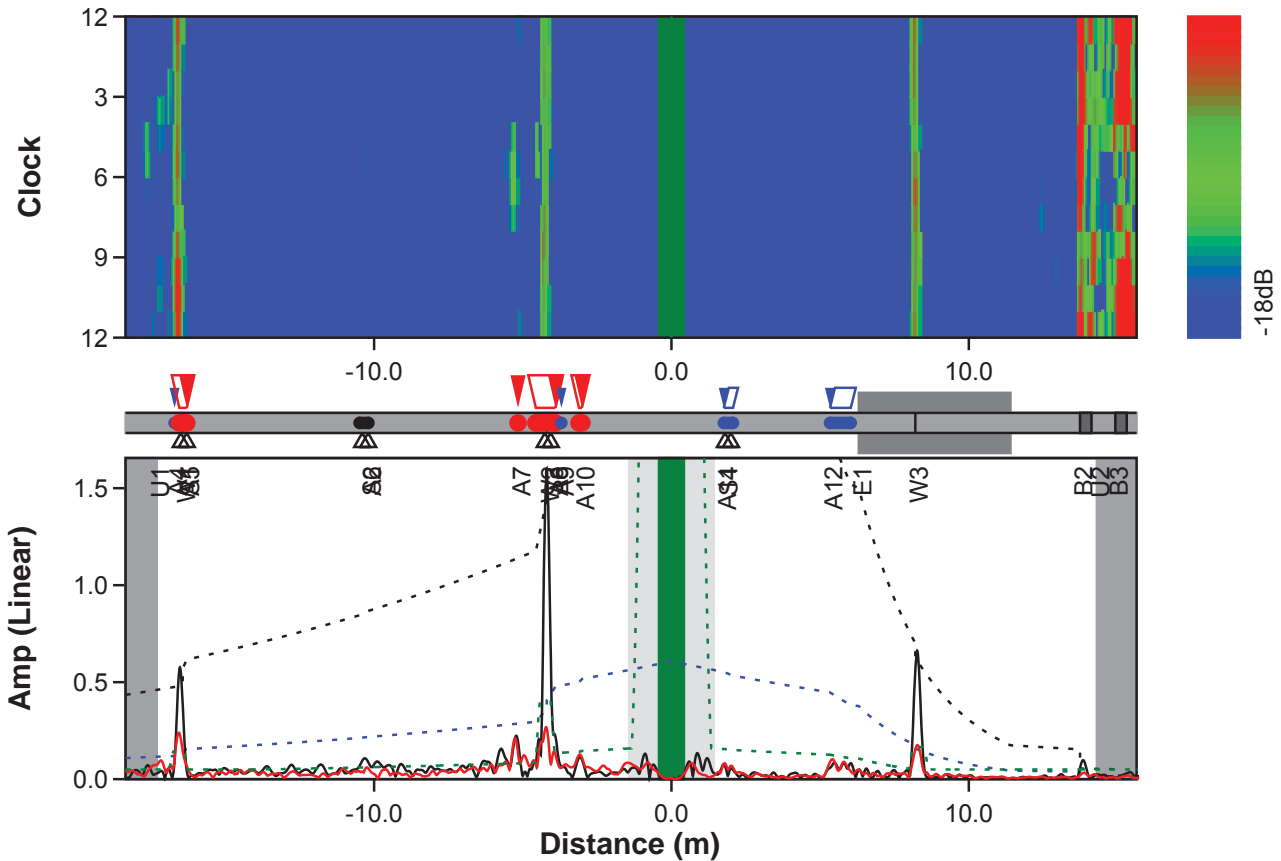


Closed view corrosion under pipe support



Test ID: G4-214#2208	Result: Major Concern
Pipe: 12" RFO (S3)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 5.2FR, T(0,1)
Location: Weld -4.19 m	Calibration: Automatic (843.136 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6321'N, 144°41.1176'E
Tested: 16 Jun 2014 08:58	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 14" RFO-No.6 - Test Point No.: S3
Positive direction with product flow.
Found external corrosion concentrate at bottom side (refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.91 mm), (3 o'clock:10.07 mm), (6 o'clock:9.72 mm), (9 o'clock:9.55 mm)





Test ID: G4-214#2208	Result: Major Concern
Pipe: 12" RFO (S3)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 5.2FR, T(0,1)
Location: Weld -4.19 m	Calibration: Automatic (843.136 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6321'N, 144°41.1176'E
Tested: 16 Jun 2014 08:58	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
U1	-17.3	-	~		End	
A4	-16.71	2	0	0	Medium	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 10.15 mm. Remaining wall thickness is 7.65 mm (24.6% wall loss)
W1	-16.43	25	0	60	Weld	
S1	-16.3	-	0.2	60	Support	
A5	-16.3	16	0.25	60	Severe	Visually confirm external corrosion under pipe support at 6H00 with max. pit depth is 0.25"@ 6.3 mm. UT reading adjacent to pit is 10.03 mm. Remaining wall thickness is 3.68 mm (62.8% wall loss)
S2	-10.19	-	0.2	45	Support	
A6	-10.19	3	0.3	45	Minor	Visually confirm external corrosion at 6H00 with max. pit depth is 0.06"@ 1.5 mm. UT reading adjacent to pit is 9.76 mm. Remaining wall thickness is 8.26 mm (15.3% wall loss)
A7	-5.16	5	0	6	Severe	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.18"@ 4.5 mm. UT reading adjacent to pit is 9.18 mm. Remaining wall thickness is 4.68 mm (49.0% wall loss)
W2	-4.19	20	0	80	Weld	Datum of screening
S3	-4.05	-	0.2	90	Support	
A8	-3.9	3	0.66	40	Severe	Visually confirm external corrosion under pipe support (6H00) with max. pit depth is 0.22"@ 5.5 mm. UT reading adjacent to pit is 9.82 mm. Remaining wall thickness is 4.32 mm (56.0% wall loss)



Test ID: G4-214#2208	Result: Major Concern
Pipe: 12" RFO (S3)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 5.2FR, T(0,1)
Location: Weld -4.19 m	Calibration: Automatic (843.136 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6321'N, 144°41.1176'E
Tested: 16 Jun 2014 08:58	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
A9	-3.7	1	0	30	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.13"@ 3.3 mm. UT reading adjacent to pit is 9.93 mm. Remaining wall thickness is 6.63 mm (33.2% wall loss)
A10	-3.01	1	0.1	0	Severe	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.18"@ 4.5 mm. UT reading adjacent to pit is 9.57 mm. Remaining wall thickness is 5.07 mm (47.0% wall loss)
A11	1.76	1	0.31	0	Medium	Visually confirm localized external corrosion under pipe support (6H00) with max. pit depth is 0.10"@ 2.5 mm. UT reading adjacent to pit is 9.45mm. Remaining wall thickness is 7.95 mm (24.6% wall loss)
S4	1.8	-	0.2	0	Support	
A12	5.33	1	0.7	0	Medium	Visually confirm localized external corrosion at 6H00 with max. pit depth is 0.08"@ 2.0 mm. UT reading adjacent to pit is 9.12 mm. Remaining wall thickness is 7.12 mm (24.6% wall loss)
E1	6.3	-	5.1	1	Earth	
W3	8.2	20	0	70	Weld	
B2	13.74	-	0	70	45 deg Bend	
U2	14.3	-	~		End	
B3	14.92	-	0	40	45 deg Bend	



Ring location



Positive direction



Negative direction



Corrosion under pipe support

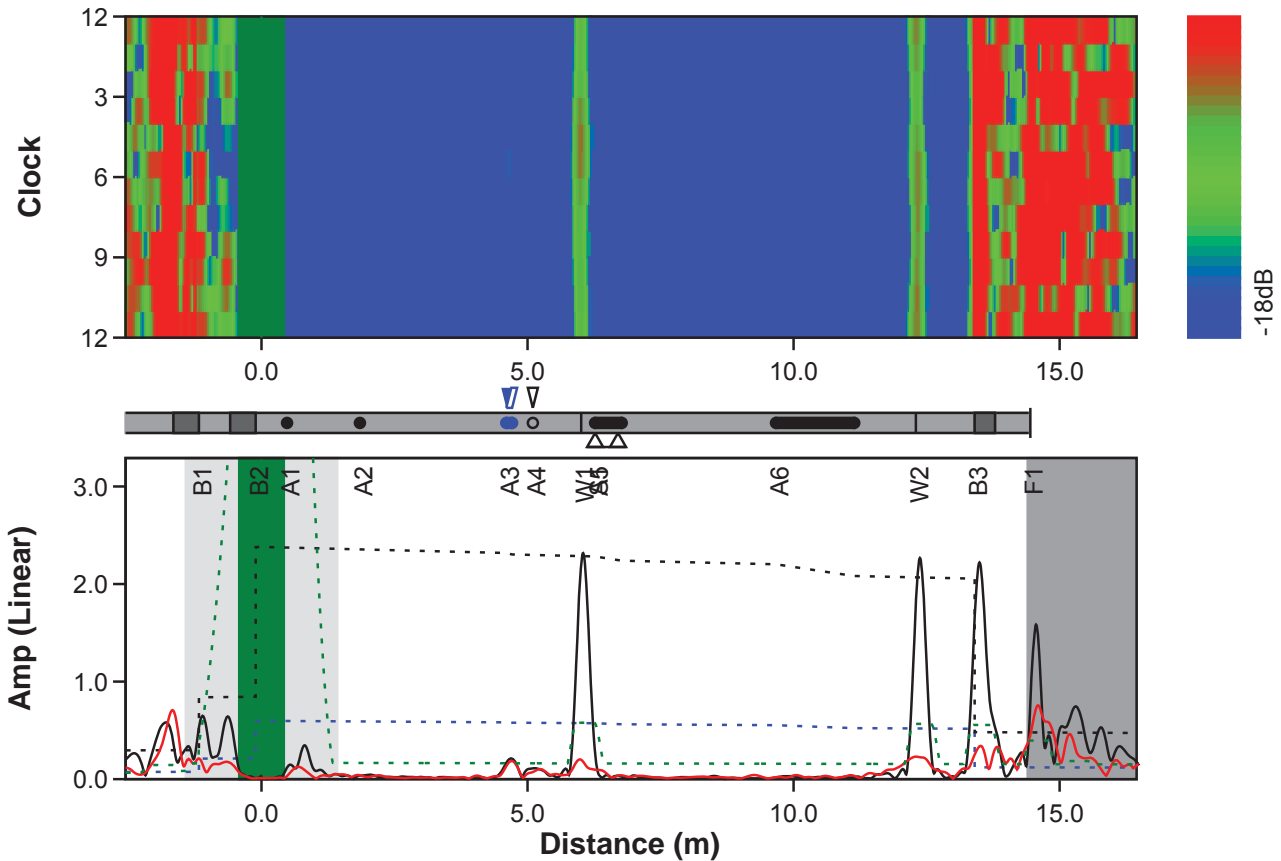


Closed view of corrosion



Test ID: G4-214#2209	Result: Medium Concern
Pipe: 12" RFO (S4)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 4.6FR, T(0,1)
Location: Weld bend -0.11m	Calibration: Automatic (1271.25 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6425'N, 144°41.1241'E
Tested: 16 Jun 2014 12:00	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

General Notes: 14" RFO-No.6 - Test Point No.: S4
Positive direction with product flow.
Found external corrosion concentrate at bottom side (refer class, note and location as table below).
Location of signals measuring from center of ring.
Thickness at ring position are (12 o'clock:9.87 mm), (3 o'clock:9.89 mm), (6 o'clock:9.94 mm), (9 o'clock:9.95 mm)





Test ID: G4-214#2209	Result: Medium Concern
Pipe: 12" RFO (S4)	Ring: R2B12(1507)
Site: Inside Terminal	Config: 4.6FR, T(0,1)
Location: Weld bend -0.11m	Calibration: Automatic (1271.25 mV)
Size: 12 inch (10.3mm)	Version: 3.103, Wavemaker G4-214
	GPS: 13°27.6425'N, 144°41.1241'E
Tested: 16 Jun 2014 12:00	Client: Vital Energy
Tested by: Khairul Anuar Husain [SGS]	Procedure: WI-TM-065/Ver.00/27.04.2011
	DACs: Call=6%, Weld=23%

Feature	Location	ECL	Length	Extent	Class	Notes
B1	-1.17	-	0	70	45 deg Bend	
B2	-0.11	-	0	45	45 deg Bend	Datum of screening
A1	0.48	1	0	50	Minor	Visually confirm external corrosion at 7H00 with max. pit depth is 0.05"@ 1.3 mm. UT reading adjacent to pit is 9.91 mm. Remaining wall thickness is 8.61 mm (13.1%wall loss)
A2	1.85	0	0	0	Minor	Visually confirm external corrosion at 4H00 with max. pit depth is 0.05"@ 1.3 mm. UT reading adjacent to pit is 9.89 mm. Remaining wall thickness is 8.59 mm (13.1% wall loss)
A3	4.59	2	0.11	13	Medium	Visually confirm external corrosion at 6H00 with max. pit depth is 0.16"@ 4.0 mm. UT reading adjacent to pit is 9.67 mm. Remaining wall thickness is 5.67 mm (41.4% wall loss)
A4	5.09	1	0	13	Anomaly	UT confirm no significant finding. Minimum thickness reading is 10.16 mm.
W1	6	25	0	90	Weld	
S1	6.27	-	0.43	90	Support	
A5	6.27	8	0.5	90	Minor	Visually confirm corrosion under pipe support (6H00) with max. pit depth is 0.06"@ 1.5 mm. UT reading adjacent to pit is 9.75 mm. Remaining wall thickness is 8.25 mm (15.4% wall loss)
A6	9.67	0	1.47	4	Minor	Visually confirm external corrosion at 6H00 with max. pit depth is 0.06"@ 1.5 mm. UT reading adjacent to pit is 9.67 mm. Remaining wall thickness is 8.17 mm (15.5% wall loss)